

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF ILLINOIS**

CALEB BARNETT, *et al.*,

Plaintiffs,

vs.

KWAME RAOUL, *et al.*,

Defendants.

DANE HARREL, *et al.*,

Plaintiffs,

vs.

KWAME RAOUL, *et al.*,

Defendants.

JEREMY W. LANGLEY, *et al.*,

Plaintiffs,

vs.

BRENDAN KELLY, *et al.*,

Defendants.

FEDERAL FIREARMS
LICENSEES OF ILLINOIS, *et al.*,

Plaintiffs,

vs.

JAY ROBERT “JB” PRITZKER, *et al.*,

Defendants.

Case No. 3:23-cv-209-SPM

** designated Lead Case

Case No. 3:23-cv-141-SPM

Case No. 3:23-cv-192-SPM

Case No. 3:23-cv-215-SPM

REPORT AND DECLARATION OF JAMES E. YURGEALITIS

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REPORT AND DECLARATION OF JAMES E. YURGEALITIS

I, James E. Yurgealitis, declare as follows:

Background and Qualifications

1. I am currently self employed as a Legal and Forensic Consultant providing firearms-related technical and public policy consulting, forensic case reviews and testing and training services to corporations, legal counsel, and the public sector. During my previous 26-year career as a Federal Law Enforcement Officer, I have been recognized, and testified, as an expert on firearms in numerous local, state and federal courts. I have toured numerous firearms and ammunition manufacturer's facilities both in the United States and overseas. I maintain a personal library of firearms and ammunition related books and periodicals and maintain contact with other recognized experts in the field. My final assignment in government service was as Senior Special Agent/Program Manager for Forensic Services for the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), U.S. Department of Justice, a position I held for nine years. During that time, I was responsible for all Bureau firearms and forensic firearms related training and research at the ATF National Laboratory Center in Ammendale, Maryland.

2. My credentials, training, background and experience are stated in my curriculum vitae, a true and correct copy of which is attached as Exhibit 1. My credentials, training, background and experience as an expert witness are detailed on my Statement of Qualifications, a true and correct copy of which is attached as Exhibit 2.

3. I have been retained by the Office of the Attorney General of Illinois to provide expert testimony in litigation challenging various aspects of Illinois Public Act 102-1116, also known as the Protect Illinois Communities Act (PICA). As of the date of this report and declaration, the scope of my engagement includes providing expert testimony in the following cases: *Harrel v. Raoul*, Case No. 23-cv-141 (S.D. Ill.); *Langley v. Kelly*, Case No. 23-cv-192 (S.D.

Ill.); *Barnett v. Raoul*, 23-cv-209 (S.D. Ill.); *Federal Firearms Licensees of Illinois v. Pritzker*, 23-cv-215 (S.D. Ill.); *Herrera v. Raoul*, 23-cv-532 (N.D. Ill.); and *Kenneally v. Raoul*, No. 23-cv-50039 (N.D. Ill.). I am being compensated at a rate of \$400 per hour for my work on this declaration, and \$1600 per travel + work day.

Scope and Overview of Opinions

4. I have been asked by the Office of the Attorney General of Illinois to provide testimony based on my firearms expertise about: (1) the origin of the types of “assault weapons” regulated by PICA; (2) what the characteristics, capabilities, and uses of “assault weapons” are; and (3) how “assault weapons,” as defined under PICA, compare to other types of firearms.

5. In Part I of this report, I discuss how “assault weapons” trace their origin to “assault rifles” developed during World War II and the beginning of the Cold War era. Many of the “assault weapons” covered by PICA can directly trace their origins to weapons developed for use in combat. As such, they were not initially intended for general distribution/sale to the public and still retain the relevant features and performance as when initially designed, manufactured, and issued for military use in combat.

6. In Part II of this report, I discuss early examples of “assault weapons,” such as Colt’s AR-15 “Sporter,” in the civilian market. I describe how manufacturers of these weapons promoted them based on their military origin.

7. In Part III of this report, I discuss some of the first efforts to define and regulate “assault weapons”. In particular, I discuss the initial list of “assault weapon” features ATF developed in the late 1980’s and how that list informed the Federal Assault Weapons Ban enacted in 1994.

8. In Part IV of this report, I discuss the weapons and attachments PICA regulates. In Part IV-A, I discuss the semi-automatic rifles PICA classifies as “assault weapons”. In Part IV-B, I

discuss the .50 caliber rifles and .50 BMG caliber ammunition PICA regulates. In Part IV-C, I discuss the semi-automatic pistols PICA classifies as “assault weapons”. In Part IV-D, I discuss the semi-automatic shotguns PICA classifies as “assault weapons”. Throughout Part IV, I also address PICA’s limits on magazine capacity.

9. In Part V of this report, I conclude with my opinion that “assault weapons,” like AR type and AK type rifles, are a poor choice for civilian self-defense. Finally, I describe how the availability of “assault weapons” in the civilian market poses a threat to public safety and to law enforcement.

Part I: Military Origin of “Assault Weapons”

A. Germany’s Sturmgewehr Model 1944 – StG 44: the first “Assault Rifle”

10. The origin of modern “assault weapons” can be traced to the final years of World War II and, specifically, the German Sturmgewehr Model 1944 (“StG 44”). The StG 44 appeared in production form late in World War II, following earlier pre-production variants that included the MP 42 and MP 43 (Machinenpistol 1942 and 1943, respectively). The StG 44 was an automatic rifle designed by the German military for German soldiers. The Germans termed the StG 44 a “Sturmgewehr”, literally “Storm Rifle” or “Assault Rifle”. The StG 44 is generally regarded as the first “assault rifle”. Its combination of firepower, portability, and ease of production inspired other countries to develop their own “assault rifles” in the first decades of the Cold War.

11. The StG 44 is pictured here¹:

¹ Image source: Peter Suciu, “Sturmgewehr, the First Assault Rifle,” *Recoil* (June 19, 2016), available at <https://www.recoilweb.com/sturmgewehr-the-first-assault-rifle-100907.html>



Sturmgewehr (“Storm Rifle”) Model 1944 – StG 44

12. Toward the end of World War II, some German forces began being equipped with the StG 44 on the battlefield. The features designed into the German StG 44 were intended to increase the lethality of the individual soldier in combat and to enable faster and more economical manufacture.

13. Notable features of the StG 44 included:

- a. **Gas-powered select-fire.** The StG 44 could fire in both semi-automatic and full-automatic modes.² This feature enabled a higher rate of fire than was possible using standard-issue bolt action rifles, such as the 8mm Mauser K-98k rifles carried by the majority of German troops throughout World War II.
- b. **Welded steel stampings.** The StG 44 was made using steel stampings. Steel stampings made for a lighter weapon, increasing the amount of ammunition an individual combatant could carry and/or increasing mobility. Additionally, steel stampings were easier and less expensive to manufacture than machining parts from solid steel castings or forgings.

² “Semi-automatic” refers to a repeating firearm that fires one shot for each pull of the trigger until the ammunition supply is exhausted. The energy of the fired cartridge is utilized to cycle the mechanism of the firearm to feed and chamber the next shot. “Full-automatic” refers to a firearm that will continuously fire successive shots when the trigger is pulled, and will only stop when the trigger is released or the supply of ammunition is exhausted. A “select-fire” firearm is capable of switching between and functioning in either full- or semi-automatic fire mode.

- c. **Detachable magazine.** The StG 44 used a detachable magazine. Detachable magazines allowed more rapid reloading than previous standard-issue bolt action firearms or firearms with internal magazines.
- d. **Separate pistol style grip.** The StG 44 used a pistol grip that was separate from the butt stock. A separate pistol style grip enhanced the ability of combat soldiers to quickly maneuver their firearms into firing position and retain stability for more precise aim while firing in either semi-automatic or full-automatic modes.
- e. **Barrel shroud.** The StG 44 had a barrel shroud. A barrel shroud encircles and protects the end of the barrel, keeping the barrel safe from damage caused by collision with objects and giving the soldier using the firearm an auxiliary 360-degree grip point on the barrel without burning his hand.
- f. **Bayonet mounting lug.** The STG 44 had a bayonet mounting lug that provided combat soldiers with an additional weapon for use in close combat.
- g. **Threaded Barrel.** The StG 44 had a threaded barrel that allowed for the attachment of a grenade launcher (on this particular rifle), providing combat soldiers with an additional weapon, albeit for use at a greater distance.

14. Following the end of the war, captured StG 44's were analyzed by the Allies. Some militaries, including the United States, were slower to show interest in developing their own "assault rifles" than others, like the Soviet Union.

15. The caliber used by the StG 44 was smaller than the .30-06 caliber ammunition used in the M1 Garand, the standard-issue American service rifle. The M1 Garand is pictured here³:

³ Image source: Smithsonian, https://americanhistory.si.edu/collections/nmah_418516



16. The smaller caliber of the StG 44 made it possible for a soldier to carry more ammunition, but the .30-06 caliber M1 Garand had greater range and power per round. But as noted firearm expert and historian Jim Supica wrote in his foreword to the book *Guns*, “the assault rifle concept wouldn’t go away.”⁴

B. “Assault Rifles” in the early Cold War: AK-47, FN-FAL, HK G3

17. The Soviet Union adopted its first “assault rifle” in 1945. As Supica notes: “The Soviet Union accepted the lower power round idea in its fixed magazine semi-auto chambered for an intermediate power 7.62 x 39 mm round in 1945, the SKS, which saw wide distribution and production in Soviet client states.”⁵

18. Two years later in 1947, the USSR followed the SKS with what Supica terms “the quintessential assault rifle – the Kalashnikov designed AK-47.”⁶ An AK-47 is pictured here⁷:

⁴ Jim Supica, *Guns* (TAJ Books 2006), pp. 26-28.

⁵ *Id.*

⁶ *Id.*

⁷ Image source: Poyer, Joe, *The AK-47 and AK-74 Kalashnikov Rifles and Their Variations*, (North Cape Publications 2004), p. 9.



AK-47

19. The design of the AK-47 carried forward a number of the features introduced on the German StG 44. These features included:

- a. a gas-powered operating system;
- b. use of steel stampings in its construction;
- c. a separate pistol grip;
- d. a separate shoulder stock;
- e. a detachable magazine;
- f. a bayonet lug; and
- g. provision for attachment of a grenade launcher.

20. Due to the separate stock and pistol grip, the AK, much like the StG 44, also utilized a barrel shroud/or foregrip on the forward third of the rifle. Some variations of the early AK-47's (the AKM) also featured a "compensator" at the muzzle that deflected gas upward and to the right to compensate for the rifle's tendency to kick up and to the right with every shot.

21. In the 1950's, many countries sought to replace World War I and World War II vintage bolt action and semi-automatic rifles with these newer and more effective designs. With the birth of the North Atlantic Treaty Organization (NATO) however, utilization of Soviet Bloc AK or SKS assault rifles was not possible. Accordingly, a number of firearms manufacturers outside the Soviet sphere of influence developed military rifles that carried forward these same features to one extent or another. Fabrique Nationale (FN) of Herstal, Belgium, and Heckler & Koch (HK), of Oberndorf, Germany, are two noteworthy examples.

22. FN developed the FN-FAL (Fusil Automatique Leger) and HK the G3, both of which found a ready market amongst nations that did not favor the Soviet AK type designs.

23. Both are shown below⁸:



FN Fusil Automatique Leger (FN-FAL)



Heckler & Koch G3

24. Both the FN-FAL and the HK G3 incorporated features which, like the AK, were derived directly from the StG 44. Their designs featured some parts made from metal stampings as opposed to heavier and more expensive machined steel pieces. A separate pistol grip, shoulder stock, detachable magazine, and barrel shroud followed the basic design of the StG 44. A flash hider and/or muzzle brake have appeared in production variations of both rifles.

⁸ Image sources: Smithsonian (FN-FAL), https://www.si.edu/object/fn-fal-fusil-automatique-leger-anc-1964-automatic-rifle%3Anmah_416447; Smithsonian (HK G3), https://www.si.edu/object/hk-g3-automatic-rifle%3Anmah_419106

25. These rifles were destined from inception to become widely exported, as the domestic market in both countries was relatively limited. The FN-FAL and HK G3 have been in production since the 1950's and both FN and HK have licensed production to numerous countries in South America, Africa, and the Middle East.

C. AR-15/M16: the American “Assault Rifle”

26. In the United States, progress in this arena moved at a significantly slower pace. The prevailing wisdom in the United States was to stay away from lighter and smaller rifles, and rifle caliber cartridges, as the .30-06 caliber cartridge used in the M1 Garand rifle during World War II had proven to be more than successful. The prevailing attitude could be summarized in the adage “if it ain’t broke...don’t fix it.”

27. This began to change during and after the Korean War. During the Korean War, individual U.S. soldiers and Marines were equipped with World War II era semi-automatic M1 Garand rifles and semi-automatic .30 caliber M1 Carbines (as well as select-fire M2 Carbines and Thompson submachineguns). During and after that conflict, there were a number of military officials who supported a move to a smaller caliber, high velocity cartridge and a lighter rifle with which to fight future wars.

28. In terms of small arms designed and produced for military use, form follows function, and features are present to maximize effectiveness. Maximizing effectiveness in terms of military small arms includes the ability to deliver reliable lethality or the ability to incapacitate the chosen target and provide increased survivability for the operator in battle. The potential lethality of any given firearm is dependent on the balance among several interdependent factors, including:

- a. Caliber: The caliber of any particular firearm contributes to potential lethality, but the relationship of caliber to lethality is complex. Caliber refers only to the diameter of the projectile (bullet) and not the relative “power” of the cartridge itself (in terms of muzzle energy, effective range and muzzle velocity). A lower powered cartridge will have a lower muzzle velocity and accordingly a shorter effective range, all else being equal.

- b. Muzzle velocity: Muzzle velocity is a measurement of the speed of a projectile (bullet) in feet per second (FPS) when leaving the barrel of any given firearm. Muzzle velocity has a direct correlation with the effective range of a firearm.
- c. Muzzle Energy: Muzzle energy is the measurement, in foot-pounds,⁹ of any particular bullet's kinetic energy as it leaves the muzzle of the firearm. The kinetic energy of a bullet depends on its mass and velocity. The more energy a bullet can transfer to the target, the more effective it will likely be in causing damage or death. In addition, a larger heavier bullet requires a more powerful cartridge to achieve the same muzzle energy as a smaller lighter one.
- d. Terminal Velocity: Terminal velocity is the measured velocity of a fired bullet upon hitting its target. Terminal velocity is obviously lower than the muzzle velocity of any specific firearm as the bullet in flight is affected by aerodynamic drag (and to some extent by gravity) while travelling the distance from shooter to target. A higher terminal velocity will result in more of the bullet's kinetic energy being transferred to the target.
- e. Effective range: The effective range is the generally accepted radius within which a particular ammunition cartridge is considered capable of accurately delivering a projectile with enough energy to incapacitate or kill. Without argument, by that measure, any firearm is potentially lethal at close range. However, as the distance between the operator and target increases any firearm eventually becomes 'less lethal' as its effective range is exceeded. For example, a 9mm handgun is generally considered to have a maximum effective range of between 0-50 yards, and a shotgun, depending on the ammunition, an effective range of between 0-200 yards. The effective range of rifles can range from hundreds to thousands of yards.
- f. Accuracy: All of these particular yet interdependent components of lethality are meaningless without the ability of the operator to hit their target. Accuracy, however, is not solely dependent on the marksmanship skills of the shooter. Accuracy can be affected by design, manufacture, recoil and/or the operating mechanism of the firearm itself.
- g. Rate of Fire: Presuming that the correct 'cocktail' of factors described above results in the design and manufacture of an accurate firearm, then the rate of fire will weigh heavily in the given 'lethality' of that particular firearm. It follows that the ability of any given firearm to deliver multiple accurate shots (within its effective range) increases its potential lethality.

29. U.S. military leaders in the first decades of the Cold War were looking for the right

"cocktail" of these interdependent factors for the standard infantry rifle. For those in favor of retaining a larger caliber, the initial answer to the burgeoning move towards assault rifles was a

⁹ A foot-pound is the amount of energy needed to move one pound a distance of one foot (in the direction of the force).

variation of the basic World War II M1 Garand operating system in .308 caliber, the T44, later designated the M14.¹⁰ Outwardly, the M14 retained a traditional wood stock, as did the Garand; however, it featured a detachable magazine, select-fire (both semi-automatic and full-automatic) capability, and a flash hider. It competed directly against the FN-FAL (designated T88) in U.S. Army trials and was selected in 1957. An image of the M14 appears below¹¹:



30. But despite the adoption of the M14 in 1957, a faction in the U.S. military continued to press for a lighter rifle that fired smaller caliber high velocity rifle cartridges.

31. In the mid 1950's, Eugene Stoner, chief Engineer of the American company ArmaLite Corporation, developed a number of lightweight assault rifle designs which resulted in the AR-10 in .308 caliber. This was chiefly marketed to numerous countries outside the U.S., however these efforts met with little commercial success. The AR-10's design closely followed what was now becoming standard assault rifle design, i.e., light weight (aluminum forged receivers, as opposed to machined steel), separate pistol grip and shoulder stock, barrel shroud/handguard, detachable magazine, and numerous flash hider/muzzle brake variations.

32. In response to a verbal request from U.S. Army General Willard Wyman, ArmaLite continued to refine the basic design of the AR-10, which resulted in the AR-15. The AR-15 was (eventually) designed and produced to chamber and fire the 5.56 x 45mm cartridge (somewhat

¹⁰ .308 caliber is also referred to as 7.62x51mm NATO caliber.

¹¹ Image source: Smithsonian, https://americanhistory.si.edu/collections/nmah_418050

interchangeable with .223 Remington caliber).^{12,13} Gen. Wyman essentially wanted to replace the .30-06 caliber World War II M1 Garand, and newly adopted .308 caliber M14, with the smaller caliber, and lighter, AR-15.

33. For comparison purposes it should be noted that the World War II M1 Garand rifle and newer M14 had a muzzle velocity of approximately 2800 FPS. Both the M1 and M14 have an effective range of approximately 500 yards. As initially designed and produced, the AR-15 fired a 5.56mm (approximately .223 caliber) bullet at approximately 3200 FPS (about 14% faster than the M1 and M14) with an approximate effective range of 600 yards (20% farther than the M1 and M14).

34. Armalite delivered a number of prototype AR-15 rifles to the U.S. Army for testing in 1958 and it fared well against the recently adopted M14.

35. The advantages of a lighter, smaller caliber rifle in the field are numerous. The recently adopted (at that time) M14 weighed approximately 9.2 pounds empty as compared with the approximate 6.5 pound empty weight of the AR-15. The M14 utilized a 20 round magazine which weighs approximately 1.5 pounds loaded. The weight of a 20 round loaded magazine for the AR-15 is approximately 0.7 pounds.

36. If you burden a combatant with a theoretical loadout of their rifle and 400 rounds of ammunition (20 magazines of 20 rounds each) how do the M14 and AR-15 compare?

37. The M14 with 20 loaded 20 round magazines weighs 39.2 pounds. The AR-15 with 20 loaded 20 round magazines weighs 20.5 pounds. Obviously the lighter weapon system affords the individual combatant equivalent firepower with a lighter equivalent load or capacity to carry

¹² Stevens, R. Blake, and Ezell, Edward C., *The Black Rifle* (Collector Grade Publications, 2004 ed.), pp. 55-58.

¹³ U.S. Army, "Report of the M-16 Rifle Review Panel, History of the M-16 Weapon System," (June 1, 1968), p. C-1 (original document), p. 24 (online PDF copy), available at: <https://apps.dtic.mil/sti/pdfs/ADA953110.pdf>

additional gear. A lighter rifle is also easier to bring to bear on a target from another position and is more easily borne by a soldier of smaller stature (as per some of the field tests referenced below).

38. The U.S. Army's "Report of M16 Rifle Review Panel"¹⁴ reported the overall genesis, history and introduction of the AR-15 (subsequently redesignated M16) as the standard issue rifle for the U.S. Army. The report references numerous tests and evaluations which prompted the shift to the lightweight arm.

39. Amongst these, in 1961, the Department of Defense purchased a quantity of AR-15 rifles from Colt (to whom Armalite had licensed production) for evaluation. A number of these rifles were subsequently shipped to U.S. Army advisors in Vietnam to test their suitability for issue to South Vietnamese Army forces. Following the field evaluation, the Department of Defense Advanced Research Projects Agency (ARPA later DARPA) prepared a report (AD-343778, dated August 20, 1962) summarizing the results. Amongst the data compiled via surveys of the US Army Advisors are a number of comments regarding actual use in the field and the results. These comments describe various catastrophic injuries to Viet Cong Combatants who were shot by an AR-15, including severing of limbs.¹⁵ The M16 Review Panel also remarked on this test stating the AR-15 was "an outstanding weapon with phenomenal lethality."¹⁶

40. This rifle was adopted as standard issue by multiple branches of the U.S. military in the 1960's. Initially, as produced by Colt, the model designation was AR-15. Later, after a series of minor engineering changes, the standard U.S. military designation was changed to M16. The rifle

¹⁴ U.S. Army, "Report of the M-16 Rifle Review Panel, History of the M-16 Weapon System," (June 1, 1968), available at: <https://apps.dtic.mil/sti/pdfs/ADA953110.pdf>

¹⁵ Advanced Research Projects Agency, Office of the Secretary of Defense, "Field Test Report, AR-15 Armalite Rifle," (Aug. 20, 1962), p. 24, available at <https://apps.dtic.mil/sti/pdfs/AD0343778.pdf>

¹⁶ U.S. Army, "Report of the M-16 Rifle Review Panel, History of the M-16 Weapon System," (June 1, 1968), p. C-14 (original document), p. 37 (online PDF copy), available at: <https://apps.dtic.mil/sti/pdfs/ADA953110.pdf>

was also produced for the U.S. military by the Hydra-Matic Division of General Motors. An M16A1 produced by GM is shown below¹⁷:



41. When first deployed as a standard issue rifle for U.S. military forces, the AR-15/M16 platform was maligned as unreliable and prone to jamming. This was likely due, in part, to inadequate maintenance by the operators themselves, as well as changes to the cartridge required by U.S. military authorities. Once the problems were addressed and rectified, the rifle proved to be as reliable and accurate as the AK type rifles deployed by the North Vietnamese and Viet Cong.

42. One of the characteristics of 5.56mm/.223 bullets fired by the AR-15/M16 rifle is that upon contacting tissue, the bullet will “yaw” (begin to rotate on its axis sideways to the left or right of its direction of travel). This yaw, also called “tumbling,” contributes to the creation of both large temporary and permanent wound cavities. Generally, handgun bullets, because they are heavier and travelling at a lower velocity, do not typically yaw upon contact with tissue and do not create as large of a wound cavity nor commensurate destruction of tissue. And while heavier rifle caliber projectiles may also travel at high velocity, their larger mass makes them less unstable and thus less likely to tumble. The yaw movement of a 5.56mm/.223 bullet can also cause it to fragment

¹⁷ Image source: Smithsonian, https://www.si.edu/object/nmah_1173781

upon striking bone which contributes to additional tissue damage not immediately adjacent to the cavity itself.

43. Noted wound ballistics expert Vincent DiMaio in *Gunshot Wounds* writes in regard to wounds created by 5.56mm/.223 caliber bullets:

“As the bullet enters, the body, there is ‘tail splash’ or backward hurling of injured tissue. This material may be ejected from the entrance. The bullet passes through the target, creating a large temporary cavity whose maximum diameter is up to 11-12.5 times the diameter of the projectile. The maximum diameter of the cavity occurs at the point at which the maximum rate of loss of kinetic energy occurs. This occurs at the point where the bullet is at maximum yaw, i.e., turned sideways (at a 90-degree angle to the path) and/or when it fragments. If fragmentation does not occur and the path is long enough, the yawing continues until the bullet rotates 180 degrees and ends up in a base-forward position. The bullet will continue traveling base first with little or no yaw as this position puts the center of mass forward.”¹⁸

“The temporary cavity will undulate for 5-10 msec before coming to rest as a permanent track. Positive and negative pressures alternate in the wound track, with resultant sucking of foreign material and bacteria into the track from both entrance and exit. In high-velocity centerfire rifle wounds, the expanding walls of the temporary cavity are capable of doing severe damage. There is compression, stretching and shearing of the displaced tissue. Injuries to blood vessels, nerves, or organs not struck by the bullet, and a distance from the path, can occur as can fractures of bones, though, in the case of fractures, this is relatively rare. In the author’s experience, fractures usually occur when the bullet perforates an intercostal space fracturing ribs above and below the bullet path.”¹⁹

44. DiMaio further states:

“Projectile fragmentation can amplify the effects of the temporary cavity increasing the severity of a wound. This is the reason for the effectiveness of the 5.56 x 45-mm cartridge and the M16 rifle. For the M193 55-gr. Bullet, on the average, the yaw becomes significant at 12 cm with marked tissue disruption occurring most commonly at 15-25 cm due principally to bullet fragmentation.”²⁰

45. After its adoption in the 1960’s, the AR-15/M16 platform rifle provided a highly effective combat weapon for the U.S. military for decades. The M16A1 was supplanted by the M16A2 which added a three round burst capability to the M16A1’s select-fire capability. In the

¹⁸ DiMaio, *Gunshot Wounds*, 2d ed. (CRC Press LLC, 1999), p. 54.

¹⁹ *Id.*, p. 55

²⁰ *Id.*, p. 56

1990's, a carbine²¹ (compact) version of the M16, called the M4, began to replace older versions of the M16 issued to U.S. soldiers. The M4 featured a shorter barrel than the M16, which helped with maneuverability in combat.

D. M16 and M4: Combat Characteristics

46. The M4 and the M16 were the primary service weapons for American troops in the wars in Afghanistan and Iraq. The following chart from the U.S. Army manual "Rifle Marksmanship M16-/M4-Series Weapons" published in August 2008 summarizes some of the characteristics of these weapons²²:

Chapter 2				
Weapon Characteristics, Accessories, and Ammunition				
This chapter describes the general components, characteristics, accessories, and ammunition for M16- and M4-series weapons, and includes a brief explanation of how to mount the various accessories.				
SECTION I. RIFLES AND CARBINES				
All M16-/M4-series weapons are magazine-fed, gas-operated, air-cooled, shoulder-fired 5.56-millimeter weapons. This section describes the general characteristics and components of M16-/M4-series weapons.				
CHARACTERISTICS OF M16-/M4-SERIES WEAPONS				
2-1. Table 2-1 describes the general characteristics of M16-/M4-series weapons.				
Table 2-1. Characteristics of M16-/M4-series weapons.				
CHARACTERISTICS	M4-SERIES	M16A2/A3	M16A4	M16A1
WEIGHT (lb)				
Without magazine and sling	6.49	7.78	9.08	6.35
With sling and loaded:				
20-round magazine	7.19	8.48	9.78	6.75
30-round magazine	7.50	8.79	10.09	8.06
Bayonet knife, M9	1.50	1.50	1.50	1.50
Scabbard	0.30	0.30	0.30	0.30
Sling, M1	0.40	0.40	0.40	0.40
LENGTH (in)				
Rifle w/bayonet knife	N/A	44.88	44.88	44.25
Overall rifle length	N/A	39.63	39.63	39.00
Buttstock closed	29.75	N/A	N/A	N/A
Buttstock open	33.0	N/A	N/A	N/A
OPERATIONAL CHARACTERISTICS				
Barrel rifling-righthand 1 twist (in)	7	7	7	12
Muzzle velocity (fps)	2,970	3,100	3,100	3,250
Cyclic rate of fire (rounds per min)	700-900	700-900	800	700-800
MAXIMUM EFFECTIVE RATE OF FIRE (rounds per min)				
Semiautomatic	45	45	45	45-65
3-round burst	90	90 (A2)	90	N/A
Automatic	150-200 A1	150-200 A3	N/A	150-200
Sustained	12-15	12-15	12-15	12-15
RANGE (m)				
Maximum range	3,600	3,600	3,600	2,653
Maximum effective range:				
Point target	500	550	550	460
Area target	600	800	600	N/A

²¹ Although not statutorily defined under federal or Illinois law, a "carbine" is generally considered to be a compact variant of a full-size rifle. Examples of this include the U.S. M4 and the World War II German K98k. An exception to this would be the World War II U.S. M1 .30 caliber carbine which was designed as a smaller lighter rifle for rear echelon personnel.

²² U.S. Army, "Rifle Marksmanship M16-/M4-Series Weapons," FM 3-22.9 (Aug. 12, 2008), at p. 2-1.

47. As the chart notes, both the M4 and the M16 fire 5.56mm ammunition. The muzzle velocity for the M4 is listed as 2970 feet per second (FPS). The M16 ranges in muzzle velocity from 3100 FPS to 3250 FPS. The lower muzzle velocity of the M4 can be attributed to its shorter barrel length.

48. The maximum effective range for point targets is listed as 460 meters to 550 meters depending on the M4 or M16 variant. This is the maximum distance at which the weapon can hit a target about the size of the upper body and still injure, incapacitate, or kill.

49. The cyclic rate for the M4 and M16 variants is listed as ranging from 700 to 900 rounds per minute depending on the model. The “cyclic rate” is the theoretical mechanical rate at which the rifle is capable of being fired. The cyclic rate assumes a constant flow of ammunition through the weapon without pausing, such as for a magazine change. In other words, the cyclic rate is based on conditions that might be possible in a test or range setting, but not necessarily in real-world combat settings.

50. As reflected in the U.S. Army manual for the M4/M16, the cyclic rate is different than the “maximum effective rate of fire”. Effective fire includes the capability of the operator to fire effective aimed shots. The U.S. Army manual shown above lists four maximum effective fire rates: 45 to 65 rounds per minute in semi-automatic; 90 rounds per minute in burst; 150 to 200 rounds per minute in automatic; and 12 to 15 rounds per minute in “sustained”. The glossary to the manual describes “sustained rate of fire” as the “Rate of fire that a weapon can continue to deliver for an indefinite period without overheating.”²³

51. Later, the manual states that the most effective use of the M4 and M16 at ranges beyond 25 yards is rapid semi-automatic fire, not full-automatic fire²⁴:

²³ U.S. Army, “Rifle Marksmanship M16-/M4-Series Weapons,” FM 3-22.9 (Aug. 12, 2008), at Glossary-10.

²⁴ U.S. Army, “Rifle Marksmanship M16-/M4-Series Weapons,” FM 3-22.9 (Aug. 12, 2008), at pp. 7-8, 7-9.

RAPID SEMIAUTOMATIC FIRE

7-12. The most important firing technique during fast-moving, modern combat is rapid semiautomatic fire. It is the most accurate technique of placing a large volume of fire on poorly defined targets or target areas, such as short exposure, multiple, or moving targets. To apply rapid semiautomatic fire, the Soldier intentionally fires a quick series of shots into the target area to ensure a high probability of a hit.

7-14. While Soldiers sacrifice some degree of accuracy to deliver a greater volume of fire, it is surprising how devastatingly accurate rapid semiautomatic fire can be. At ranges beyond 25 meters, rapid semiautomatic fire is superior to automatic fire in all measures: shots per target, trigger pulls per hit, and time to hit. Proper training and repeated practice increases the degree of accuracy.

52. All of these descriptions of the effectiveness of semi-automatic fire for the M4 and M16 apply to semi-automatic AR-15 models sold to civilians. The only difference between the military and civilian versions of these weapons is removal of select-fire ('switchable' semi-automatic and full-automatic) capability.

53. Both the M4 and M16 also have the ability to accept grenade launcher attachments, such as the M320/M320A1 and the M203, both of which are shown below in the attached U.S. Army training manual²⁵:

²⁵ U.S. Army, "Rifle and Carbine," TC 3-22.9, C2 (Aug. 31, 2017), at p. 4-2, available at: <https://irp.fas.org/doddir/army/tc3-22-9.pdf>

GRENADE LAUNCHERS

4-8. The M320/M320A1 grenade launcher is a lightweight grenade launcher that can operate in a stand-alone or attached configuration. The M320/M320A1 grenade launcher uses an integrated double-action-only trigger system. The M320 series is the replacement weapon for the M203. (See figure 4-1.)



Figure 4-1. M320 attached to M4 series carbine example

4-9. The M203 is a breach loaded attachable grenade launcher that is affixed to the bottom of the barrel of the M16/M4-series rifle. The M203 cannot be used in a stand-alone configuration. (See figure 4-2)



Figure 4-2. M203 grenade launcher example

54. Semi-automatic AR-15 models sold to civilians have the capacity to accept similar grenade launcher attachments, though grenades may be classified as prohibited “destructive devices” under ATF regulations.²⁶

Part II: “Assault Weapons” Enter the Civilian Market

55. At this point in my report it is important to distinguish the differences between two often conflated definitions, “assault rifle” and “assault weapon.” An “assault rifle” is generally considered/defined (although not defined federally as such) to be a select-fire rifle of intermediate caliber with a detachable magazine, such as the select-fire rifles I discussed in Part I. In the last

²⁶ 27 C.F.R. § 478.11, available at: <https://regulations.atf.gov/478-11/2023-01001#478-11>

several decades, many of these weapons have been available in the civilian market in semi-automatic versions. The semi-automatic versions are often called “assault weapons” in statutes and regulations, such as the 1994 Federal Assault Weapons Ban. But before those regulations, in the 1980’s, “assault weapons” was a term used in popular firearm industry publications to refer to a specific category of firearms, as I discuss below.

56. Colt’s AR-15 is a good example of a weapon that was designed as a select-fire “assault rifle,” that has also been sold to civilians in a semi-automatic version. Semi-automatic AR-15-type rifles are the type of firearm probably most associated with the term “assault weapon”. They are not the only type of “assault weapon,” however. Many submachine guns, like the Uzi and other similar weapons, that were initially developed for military purposes have also been sold to civilians in semi-automatic versions. These firearms have also been classified in regulations as “assault weapons,” including by PICA.

A. Colt’s AR-15 “Sporter”

57. Arguably, the AR type rifle is in second place behind AK type firearms in terms of production, sale and use by military forces worldwide. Colt sought to capitalize on the military acceptance of the AR-15/M16 and thereafter shortly began to produce these rifles for sale on the civilian market. The only functional difference between the military and civilian versions was removal of select-fire (both semi-automatic and full-automatic) capability. As the AR-15/M16 gained a reputation for reliability in military use, its sales to the civilian market gradually increased.

58. Other than the elimination of the select-fire capability, the firearms remained virtually identical. There was no modification to the semi-automatic rate of fire, muzzle velocity, effective range, etc., as they fired the same ammunition and utilized the same semi-automatic operating system. The additional features on these rifles intended to enhance their capability as military firearms remained.

59. Colt emphasized the direct lineage of the military M16 and their semi-automatic “civilianized” variant (now known as the AR-15) in their corporate marketing and advertising. The following is a sampling of Colt factory literature and advertisements from 1964 onwards.

60. The “Colt Sporter” was first mentioned in the Colt factory catalog in 1964²⁷:

**COLT AR-15 SPORTER
SEMI-AUTOMATIC RIFLE
.223 CALIBER**

Colt's answer to the demand for a semi-automatic version of the AR-15 automatic rifle purchased by The United States Armed Forces. Painstaking engineering redesign efforts have resulted in a Government-approved conversion of the Colt AR-15 automatic rifle without sacrificing any performance or weight characteristics. The semi-automatic AR-15 Sporter weighs only 6.3 pounds. Its recoil is light and barrel rise minimal.

Lightweight • Extremely accurate • Easy to handle • Straight line construction — barrel, bolt, recoil buffer unit and stock assembled in a straight line • Rapid semi-automatic fire is more controllable than with rifles of commercial design • Simple to maintain.

CALIBER	BARREL LENGTH	OVERALL LENGTH	CAPACITY	SIGHTS	SAFETY	WEIGHT
.223	21"	39"	5 rounds	Double tang rear peep sight adjustable for windage. Post type front sight adjustable for elevation.	Rotary safety—selector lever	Approx. 6½ lbs.

²⁷The suggested retail price of the Sporter is \$189.50 and includes two magazines (each blocked for five rounds), sling, flash suppressor, rubber recoil pad, cleaning rod assembly, cleaning brush, and the Colt AR-15 Sporter Operation and Maintenance manual.

²⁷ Image source: <https://thecoltar15resource.com/1964-catalog/>

61. As this advertisement reflects, Colt emphasized the AR-15's military origin, describing the "Sporter" version as "Colt's answer to the demand for a semi-automatic version of the AR-15 automatic rifle purchased by The United States Armed Forces."

62. Two years later, in a 1966 advertisement, Colt promoted the AR-15 as a law enforcement weapon²⁸:

Arm your men with confidence

Colt's AR-15 Semi-Automatic Rifle



MODEL R-6000

- Lightweight • Weighs only 6.3 pounds
- Easy to handle • Extremely accurate
- Straight line construction • Simple to maintain

Colt's answer to the law enforcement agencies' demands for a semi-automatic version of the M16 automatic rifle purchased by the United States Armed Forces. painstaking engineering redesign efforts have resulted in government-approved conversion of the automatic military rifle to a semi-automatic police weapon without sacrificing any performance or weight characteristics.

Colt Industries  **Colt's Small Arms Division
Security Equipment**
150 Huyshope Avenue, Hartford, Conn. 06102

²⁸ Image source: <https://www.firearmsforum.com/Firearms/ImageAlbum/700/47321>

63. Again, this 1966 ad emphasized the AR-15's military origin, describing the civilian version as "Colt's answer to the law enforcement agencies' demands for a semi-automatic version of the M16 automatic rifle purchased by the United States Armed Forces."

64. Colt continued this strategy in the decades that followed. A new product announcement for Colt's semi-automatic variant of the M16A2 from 1987 is shown below²⁹:

NEW FROM COLT FIREARMS
A Heritage of Fine Craftsmanship

FOR IMMEDIATE RELEASE:

**Colt® Introduces The AR-15®A2 Gov't.
Model Rifle and Carbine**

The new Colt AR-15A2 Gov't. Model .223 semi-automatic rifle and Gov't. Carbine incorporate state of the art improvements found in the M16 series.

These latest additions to Colt's offering of utility rifles and carbines for sportsmen have the military type upper receiver used in the M16A2 rifle manufactured by Colt for the United States Marine Corps and Army.

These new guns replace the AR-15A2 Sporter II rifle and AR-15A2 carbine. The most significant difference between the new guns and the Sporter rifle and carbine is the rear sighting system which is housed in the receiver's carrying handle. It has dual apertures which are adjustable for both windage and elevation out to 800 meters. A square front sight post is adjustable for zeroing. There is also provision in the handle for the attachment of the optional Colt telescopic sight.

All of the guns in the AR-15A2 series have features consistent with the M16A2: Time tested gas operated mechanism, firing from a closed bolt position • Forward bolt assist • Rifling twist of 1 turn in 7" • Handguard, buttstock and pistol grip are made from new, more impact resistant materials • Handguard is round, has improved heat deflector and is ribbed for greater grip control • Cartridge case deflector for left handed shooters on all models.

The AR-15s are manufactured in the same factory and on the same production line as the world famous M16. The Colt M16 family is the most battle proven combat rifle in the free world.

New Colt AR-15A2 Gov't. Model Rifle



New Colt AR-15A2 Gov't. Carbine



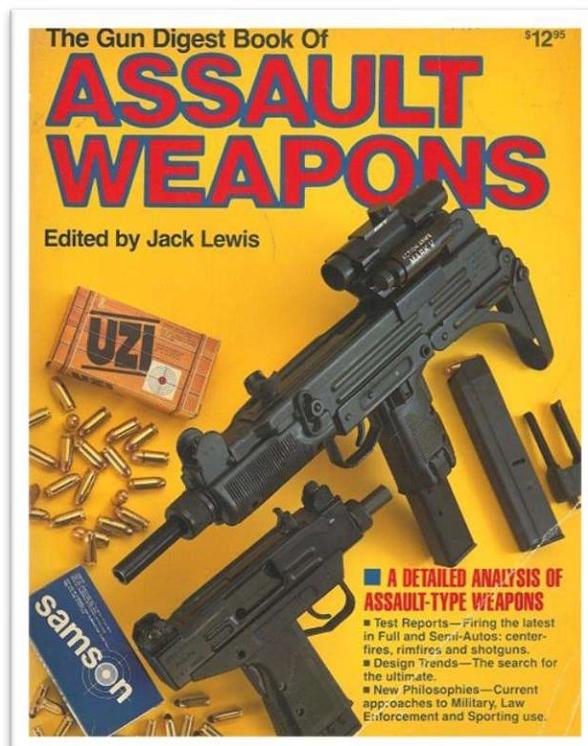
Both models have target style sights adjustable for windage and elevation out to 800 meters.

²⁹ Image source: https://minuteman1636.files.wordpress.com/2019/07/1987_new_product_page1of2.jpg

65. In this 1987 advertisement, Colt highlighted the new AR-15 model's "military type upper receiver used in the M16A2 rifle manufactured by Colt for the United States Marine Corps and Army." It further noted "All of the guns in the AR-15A2 series have features consistent with the M16A2," including a "Handguard, buttstock and pistol grip" made from "new, more impact resistant materials." Colt added: "The AR-15s are manufactured in the same factory and on the same production line as the world famous M16. The Colt M16 family is the most battle proven combat rifle in the free world."

B. Heckler & Koch MP5's, Uzi's and Other "Assault Weapons"

66. Around the same time that Colt was advertising its new AR-15 based on the M16A2, the term "assault weapon" was also utilized by some in the firearms industry/community to denote and market other semi-automatic variants of full-automatic or select-fire firearms with an obvious military heritage or features. For example, note the 1986 *Gun Digest Book of Assault Weapons*³⁰:



³⁰ Lewis, Jack (editor), *The Gun Digest Book of Assault Weapons* (DBI Books 1986).

67. In the book, which contains “a detailed analysis of Assault Type Weapons,” editor Jack Lewis reviewed and test fired the Springfield SAR-48 (among other firearms), which is a reproduction of the Fabrique Nationale (FN) FAL rifle discussed above. He found it to be “a weapon of war.”³¹

68. As shown on the cover of the 1986 *Gun Digest Book of Assault Weapons*, the term “assault weapon” also applies to firearms like the Uzi, a submachinegun. Submachineguns are defined as machineguns that fire “sub caliber” (i.e., pistol caliber) ammunition like 9mm. Israel Military Industries also successfully marketed their Uzi submachinegun for export in select-fire, and in civilian semi-automatic variants.³² A number of the handguns that are regulated by PICA are direct evolutionary descendants of submachine guns initially designed and produced for military use.

69. Many of the construction and design features attributed to assault weapons, and the StG 44, described above, were first utilized in the design and manufacture of mid-20th century submachine guns. Nazi Germany entered World War II with the Innovative Maschinenpistole 38 (MP38). It was chambered in 9mm and later, after a number of engineering changes, re-designated as the MP40. It has design features commonly found in later assault weapons including a folding stock, separate pistol grip, a detachable magazine and use of steel stampings in its construction. It is pictured here³³:

³¹ *Id.*, pp. 89-93.

³² The HK SP89 and variants of the Uzi are enumerated firearms regulated by the Act. 720 ILCS 5/24-1.9(a)(1)(K)(vi), (xiv).

³³ Image source: <https://www.rockislandauction.com/detail/77/1562/wwii-german-mp3840-arma-class-iii-smg-sales-sample>



Maschinenpistole 40 (MP40)

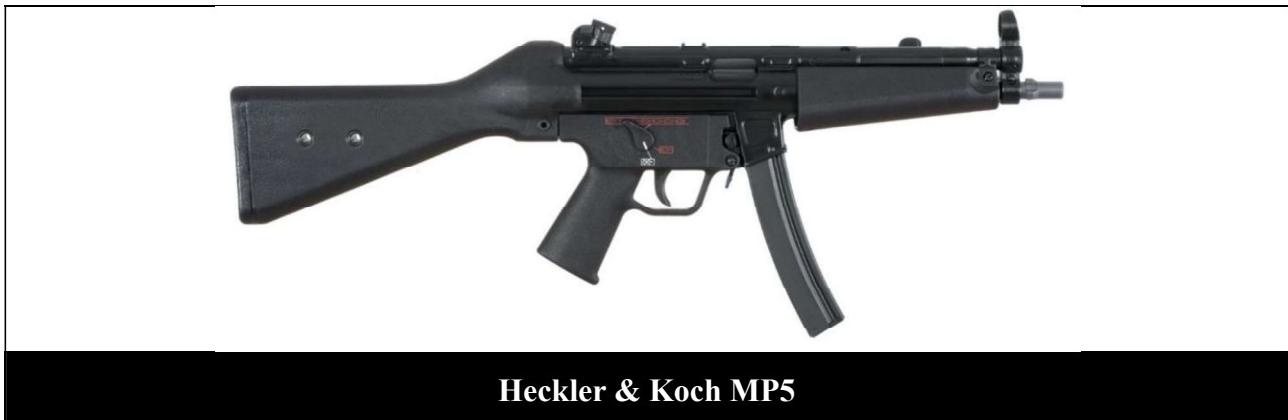
70. While the United States initially entered World War II with a military variant of the Thompson .45 caliber submachinegun, it was heavy and expensive to manufacture because a number of the major components were machined from solid steel. Before the end of the war, the Thompson had been supplemented by the M3 “Greasegun” initially produced by General Motors. The receiver was a stamped and welded sheet metal assembly with an adjustable sliding shoulder stock. Like the MP38/MP40, it had a separate pistol grip, a folding shoulder stock and a detachable box magazine with a 30-round capacity. In a utilitarian sense it was as effective as the Thompson, and, at approximately \$20, it was less than half as expensive.

71. The United Kingdom produced over one million Sten submachine guns during World War II. A rugged and reliable firearm made largely from welded steel stampings, it combined utility, reliability, and ease of manufacture. Features shared with the M3 and MP38/MP40 included an adjustable shoulder stock, a detachable box magazine and, on some variations, a barrel shroud allowing the operator to utilize the area surrounding the barrel as an auxiliary grip point without touching a heated barrel.

72. Prior to and during World War II, a number of other nations developed submachine guns which followed the same design and construction philosophy. Notable examples include the Soviet PPSH41, the Italian Beretta Model 38/42, and the Swedish Carl Gustav Model 45.

73. Following World War II, most new submachinegun designs continued the design philosophy which combined utility, ease of manufacture, and the features of wartime firearms.

74. In the early 1960's, Heckler & Koch introduced the MP5, which became an immensely popular choice for military and law enforcement agencies worldwide due to its inherent reliability and accuracy. Below is an image of an MP5³⁴:



75. The Heckler & Koch MP5 was produced in multiple iterations to include a semi-automatic civilian version as well as a pistol variant without a provision for a shoulder stock (HK SP89). Below is an image of a semi-automatic version of the Heckler & Koch MP5, called the SP5, from Heckler & Koch's website.³⁵

³⁴ Image source: Heckler & Koch, <https://hk-usa.com/hk-models/mp5a2/>

³⁵ Image source: Heckler & Koch, <https://hk-usa.com/hk-models/sp5/>



76. Note how Heckler & Koch describes the SP5 on its website:

“The SP5 was developed by Heckler & Koch as a semiautomatic, civilian sporting pistol that matches the look and feel of the legendary MP5 submachine gun. Designed and manufactured to meet the definition of a civilian pistol, the SP5 is loaded with authentic features, like a Navy barrel with threaded tri-lug adaptor, paddle magazine release, and fluted chamber . . . The SP5 is manufactured in Heckler & Koch’s Oberndorf factory in southwest Germany. It retains many of the critical elements of the MP5, including its precision-machined components and attention to detail. This high level of quality and workmanship is a result of making the SP5 in the same factory, on the same lines, and by the same workforce that has been making MP5s for years.”³⁶

77. Additionally, a number of submachinegun designs proved unsuccessful in terms of military and government sales but nonetheless found a ready market when offered as civilian semi-automatic pistols. Notable examples include the Cobray MAC-10 (and successive variants) and the Intratec TEC-9 (pictured below), which began life as a Swedish designed submachine gun, the Interdynamic MP-9.³⁷

³⁶ Heckler & Koch, <https://hk-usa.com/hk-models/sp5/>

³⁷ The TEC-9 and variants thereof are regulated under PICA by name and also have a handgrip surrounding the barrel and a detachable magazine which attaches outside of the pistol grip. 720 ILCS 5/24-1.9(a)(1)(K)(vii).



Intratec TEC-9³⁸

Part III: Federal Regulation of “Assault Weapons”

78. For more than 30 years, the types of features that make “assault weapons” useful for offensive military applications in combat settings, but not necessary for civilian self-defense, have been the subject of study and regulation.

79. For example, in 1989, an ATF working group formed under the President George H.W. Bush administration prepared a “Report and Recommendation on the Importability of Certain Semiautomatic Rifles.”³⁹ The ATF 1989 ATF Working Group Report described the working group’s origin and purpose as follows:

³⁸ Image source: https://www.gunsinternational.com/guns-for-sale-online/detail.cfm?gun_id=101542457

³⁹ ATF, “Report and Recommendation on the Importability of Certain Semiautomatic Rifles,” (July 6, 1989) (“1989 ATF Working Group Report”), available at <https://www.atf.gov/file/61761/download>

**REPORT AND RECOMMENDATION OF THE ATF WORKING GROUP
ON THE IMPORTABILITY OF CERTAIN
SEMAUTOMATIC RIFLES**

SUSPENSION OF ASSAULT-TYPE RIFLE IMPORTATIONS

On March 14, 1989, ATF announced that it was suspending, effective immediately, the importation of several makes of assault-type rifles, pending a decision as to whether these weapons meet the statutory test that they are of a type generally recognized as particularly suitable for or readily adaptable to sporting purposes. The announcement stated that ATF would not approve, until further notice, the importation of AKS-type weapons, Uzi carbines, FN/FAL-type weapons, FN/FNC-type weapons and Steyr Aug semiautomatic weapons. On April 5, 1989, the suspension was expanded to include all similar assault-type rifles.

For purposes of this suspension, assault-type rifles were rifles which generally met the following criteria:

- a. military appearance
- b. large magazine capacity
- c. semiautomatic version of a machinegun

Based on these criteria, ATF suspended action on pending applications and suspended outstanding permits covering certain firearms listed in Attachment 1. These included both centerfire and .22 rimfire caliber firearms. At that time, ATF indicated that the reexamination of these weapons would take approximately 90 days.

This ATF working group was established to conduct the reevaluation of the importability of these semiautomatic rifles. This report represents the findings and recommendations of the working group.

80. The 1989 ATF working group focused on rifles that were “semiautomatic versions of true selective fire military assault rifles.”⁴⁰ The ATF working group referred to this group of weapons as “semiautomatic assault rifles” to distinguish them from “true assault rifles” that “are selective fire weapons that will fire in a fully automatic mode.”⁴¹ The ATF working group described “semiautomatic assault rifles” as follows:

“They represent a distinctive type of rifle distinguished by certain general characteristics which are common to the modern military assault rifle. The modern military assault rifle, such as the U.S. M16, German G3, Belgian FN/FAL, and Soviet AK47, is a weapon designed for killing or disabling the enemy and, as described below, has characteristics designed to accomplish this purpose. We found that the modern military assault rifle contains a variety of physical features and characteristics designed for military applications which distinguishes it from traditional sporting rifles. These military features and

⁴⁰ 1989 ATF Working Group Report, p. 6.

⁴¹ 1989 ATF Working Group Report, pp. 5-6.

characteristics (other than selective fire) are carried over to the semiautomatic versions of the original military rifle.”⁴²

81. The ATF working group then identified the following specific “physical features and characteristics designed for military applications . . .” The features identified and how the ATF working group described them appear in the table below⁴³:

FEATURE	1989 ATF WORKING GROUP'S DESCRIPTION
a. the ability to accept a detachable magazine	“Virtually all modern military firearms are designed to accept large, detachable magazines. This provides the soldier with a fairly large ammunition supply and the ability to rapidly reload. Thus, large capacity magazines are indicative of military firearms. While detachable magazines are not limited to military firearms, most traditional semiautomatic sporting firearms, designed to accommodate a detachable magazine, have a relatively small magazine capacity. In addition, some States have a limit on the magazine capacity allowed for hunting, usually 8 rounds or less. That a firearm is designed and sold with a large capacity magazine, e.g., 20-30 rounds, is a factor to be considered in determining whether a firearm is a semiautomatic assault rifle.”
b. folding/telescoping stocks	“Many military firearms incorporate folding or telescoping stocks. The main advantage of this item is portability, especially for airborne troops. These stocks allow the firearm to be fired from the folded position, yet it cannot be fired nearly as accurately as with an open stock. With respect to possible sporting uses of this feature, the folding stock makes it easier to carry the firearm when hiking or backpacking. However, its predominant advantage is for military purposes, and it is normally not found on the traditional sporting rifle.”
c. pistol grips	“The vast majority of military firearms employ a well-defined pistol grip that protrudes conspicuously beneath the action of the weapon. In most cases, the ‘straight line design’ of the military weapon dictates a grip of this type so that the shooter can hold and fire the weapon. Further, a pistol grip can be an aid in one-handed firing of the weapon in a combat situation. Further, such grips were designed to assist in controlling machineguns during automatic fire. On the other hand, the vast majority of sporting firearms employ a more traditional pistol grip built into the wrist of the stock of the firearm since one-handed shooting is not usually employed in hunting or competitive target competitions.”

⁴² 1989 ATF Working Group Report, p. 6.

⁴³ 1989 ATF Working Group Report, pp. 6-7.

d. the ability to accept a bayonet	"A bayonet has distinct military purposes. First, it has a psychological affect on the enemy. Second, it enables soldiers to fight in close quarters with a knife attached to their rifles. We know of no traditional sporting application for a bayonet."
e. flash suppressor	"A flash suppressor generally serves one or two functions. First, in military firearms it disperses the muzzle flash when the firearm is fired to help conceal the shooter's position, especially at night. A second purpose of some flash suppressors is to assist in controlling the 'muzzle climb' of the rifle, particularly when fired fully automatic. From the standpoint of a traditional sporting firearm, there is no particular benefit in suppressing muzzle flash. Those flash suppressor which also serve to dampen 'muzzle climb' have a limited benefit in sporting uses by allowing the shooter to reacquire the target for a second shot. However, the barrel of a sporting rifle can be modified by 'magnaporting' to achieve the same result. There are also muzzle attachments for sporting firearms to assist in the reduction of muzzle climb. In the case of military-style weapons that have flash suppressors incorporated in their design, the mere removal of the flash suppressor may have an adverse impact on the accuracy of the firearm."
f. bipods	"The majority of military firearms have bipods as an integral part of the firearm or contain specific mounting points to which bipods may be attached. The military utility of the bipod is primarily to provide stability and support for the weapon when fired from the prone position, especially when fired fully automatic. Bipods are available accessory items for sporting rifles and are used primarily in long-range shooting to enhance stability. However, traditional sporting rifles do not come equipped with bipods, nor are they specifically designed to accommodate them. Instead, bipods for sporting firearms are generally designed to attach to a detachable 'sling swivel mount' or simply clamp onto the firearm."
g. grenade launcher	"Grenade launchers are incorporated in the majority of military firearms as a device to facilitate the launching of explosive grenades. Such launchers are generally of two types. The first type is a flash suppressor designed to function as a grenade launcher. The second type attaches to the barrel of the rifle either by screws or clamps. We are not aware of any particular sporting use for grenade launchers."
h. night sights	"Many military firearms are equipped with luminous sights to facilitate sight alignment and target acquisition in poor light or darkness. Their uses are generally for military and law enforcement purposes and are not usually found on sporting firearms since it is generally illegal to hunt at night."

82. In the ATF working group's view, these characteristics and features, carried over from the military assault rifle to the civilian semi-automatic versions, distinguished these "semiautomatic assault rifles" from traditional sporting rifles. As a result, the ATF working group determined that semi-automatic assault rifles were not "generally recognized as particularly suitable for or readily adaptable to sporting purposes."⁴⁴

83. Congress, when drafting the 1994 Federal Assault Weapons Ban, incorporated the technical work of the 1989 ATF working group. "Assault Weapon" was defined statutorily from 1994-2004 under the Federal Assault Weapons Ban. The legislation included a list of enumerated firearms as well as semi-automatic rifles, shotguns and handguns with two or more listed features.⁴⁵ The "assault weapon" definition in the Federal Assault Weapons Ban ("AWB") included semi-automatic rifles able to accept detachable magazines that also had two or more of the following features, all of which were also identified by the 1989 ATF work group:⁴⁶

- a. Folding or telescoping stock
- b. Pistol grip
- c. Bayonet mount
- d. Flash suppressor or threaded barrel designed to accommodate one
- e. Grenade launcher

84. The "assault weapon" definition in the Federal AWB also included semi-automatic pistols with detachable magazines and two or more of the following features:⁴⁷

- a. Magazine that attaches outside the pistol grip
- b. Threaded barrel to attach a barrel extender, flash suppressor, forward hand grip, or suppressor (silencer)
- c. Barrel shroud safety feature that prevents burns to the operator
- d. A manufactured weight of 50 ounces (1.42kg) or more when the pistol is unloaded
- e. Semi-automatic version of an automatic firearm

⁴⁴ 1989 ATF Working Group Report, pp. 6-7.

⁴⁵ Public Safety and Recreational Firearms Act, Public Law 103-322, Sec. 110101-03 (1994).

⁴⁶ *Id.*, Sec. 110102.

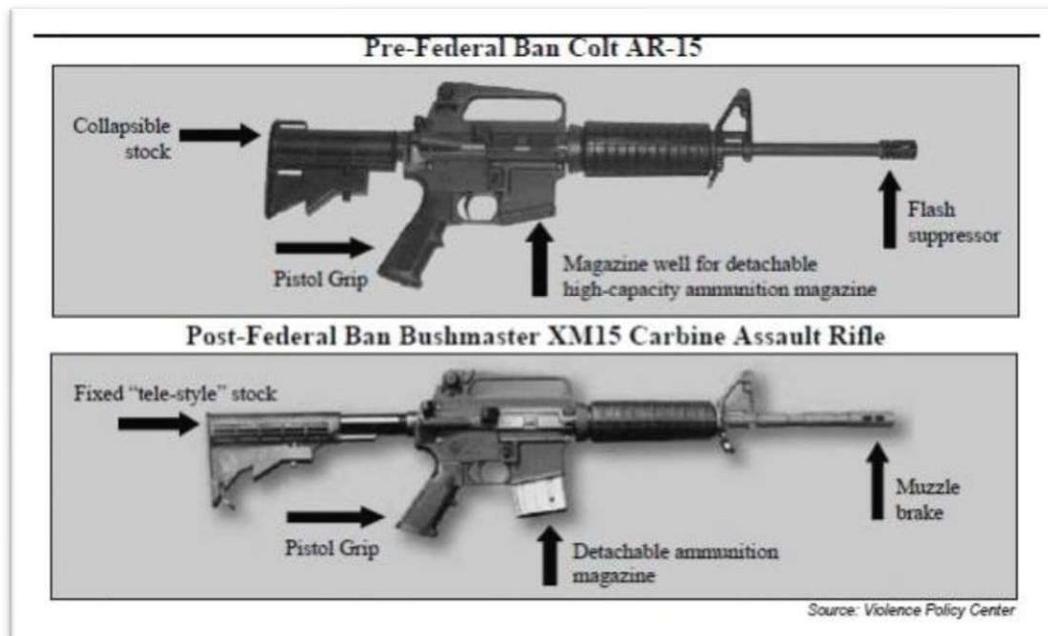
⁴⁷ *Id.*

85. The “assault weapon” definition in the Federal AWB also included semi-automatic shotguns with two or more of the following:⁴⁸

- a. Folding or telescoping stock
- b. Pistol grip
- c. A fixed magazine capacity over 5 rounds
- d. Detachable magazine

86. The Federal AWB also prohibited “large capacity ammunition feeding devices,” including magazines with a capacity of more than 10 rounds.⁴⁹

87. As noted, the Federal AWB generally required two of the identified features for a firearm to meet the definition of an “assault weapon”. While the Federal AWB was in effect, some firearms manufacturers and retailers exploited that fact to make and sell firearm models that were essentially the same as “assault weapons” under the statutory definition, but that only had one (not two) of the statutory features. The following image produced by some of the plaintiffs in this case⁵⁰ shows examples AR-15’s from before and during the Federal AWB:



⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ Federal Firearms Licensees of Illinois, Inc.’s April 3, 2024 Response to Interrogatory 5.

88. Both during and after the Federal AWB, ATF organized two subsequent working groups in 1998 and 2011. The 1998 working group concurred with the conclusions of the 1989 study and added a finding that “the ability to accept a detachable large capacity magazine originally designed and produced for a military assault weapon should be added to the list of disqualifying military configuration features identified in 1989.”⁵¹ The 2011 working group then considered the importability of certain shotguns, finding that features such as folding/telescoping/collapsible stock, shotgun magazines over 5 rounds, and forward pistol grips were most appropriate for military or law enforcement use and not sporting purposes.⁵²

89. Following the expiration of the Federal AWB in 2004, numerous jurisdictions enacted their own legislation which essentially mirrored the federal definition. However, unlike the two-feature definition from the Federal AWB, the “assault weapon” definitions used in these state laws often required only one feature. The “assault weapon” definition used in PICA is very similar to the Federal AWB definition, but with a one-feature requirement.

Part IV: “Assault Weapons” Under PICA

90. Like the Federal AWB, PICA includes a features-based definition of “assault weapon” and also identifies specific firearms by make and model. The features listed in PICA reflect many of the same concerns raised by the 1989 ATF Working Group Report. As detailed below, each of the features, whether incorporated into the firearm by the manufacturer as standard equipment or subsequently added by the owner as an accessory, can generally be considered capable of increasing the firearm’s utility in a combat scenario (form follows function) as they essentially are of military origin or developed for use in combat. Many of them trace their lineage back to the World War II German StG44 (see Part I above).

⁵¹ ATF, U.S. Treasury Department, “Study on the Sporting Suitability of Modified Semiautomatic Assault Rifles,” (April 1998), p. 37.

⁵² ATF, “Study on the Importability of Certain Shotguns,” (Jan. 2011).

91. **A pistol grip or thumbhole stock** (for rifles and shotguns). A semi-automatic rifle or shotgun that includes a pistol grip increases the ability of the operator to maneuver the firearm in confined space such as a hallway or vehicle. The pistol grip also facilitates easier firing from positions other than the shoulder (firing from the hip or a point position directly in front of the operator). Thumbhole stocks on assault weapons (as defined in PICA) were first seen after the passage of the Federal AWB in order to circumvent the “features” provision of the legislation.

92. **Protruding foregrip** (rifles, shotguns, pistols). Protruding foregrips allow increased stability of the firearm by the operator. This allows the operator to better control recoil and muzzle climb thus increasing the hit probability of successive shots. A protruding foregrip is not a feature found on traditional sporting firearms. It appeared on some versions of AK based rifles; however, it was not until the advent of the Rail Adapter Systems (RAS) and acceptance by the U.S. military of same in 1997⁵³ that foregrips for semi-automatic rifles became more widespread. A foregrip on a pistol is considered “any other weapon” under the National Firearms Act and subject to more restrictive controls to include registration in a national database.⁵⁴

93. **Folding/telescoping stocks** (rifles and shotguns). Folding and/or telescoping stocks allow the operator to more easily conceal or maneuver the rifle in a confined space such as a vehicle. They also facilitate easier or more comfortable firing from positions other than the shoulder. U.S. Military origins for this type of stock can be found on the M1 carbine in World War II when modified for paratrooper use.

94. **Flash suppressors.** A flash suppressor reduces the muzzle flash, allowing the operator to more easily maintain vision in low light conditions and also helps to conceal the flash

⁵³ Image source: <https://thefull9.net/kac-ras-the-og-rail-for-m4-rifles/>

⁵⁴ ATF, “Adding a Vertical Fore Grip to a Handgun,” (May 4, 2006), available at: <https://www.atf.gov/firearms/docs/open-letter/all-ffls-may2006-open-letter-adding-vertical-fore-grip-handgun/download>

from view. This allows the operator to more easily acquire additional targets in a shorter period of time without having to wait for their vision to adjust to a brighter muzzle flash as well as helps conceal the shooter's position.

95. **Grenade launchers.** Without question, a grenade launcher has neither a sporting lineage nor a practical application on a civilian firearm. Obviously, a grenade is an offensive military indirect/intermediate fire weapon which, if deployed, could result in mass casualties during a civilian event or in a public space.

96. **Barrel shroud.** Enclosing the barrel in a shroud serves multiple purposes. In a modern gas operated semi-automatic military rifle, it serves to protect the gas tube/piston mechanism from inadvertent damage. It also provides additional grip space for the operator to steady and control the rifle during rapid, repeat firing without being burned by a hot barrel. On a rifle equipped with a RAS (such as the U.S. M4 mentioned previously) it also provides for the attachment of a vertical foregrip.

97. **Threaded barrel.** A threaded barrel allows for attachment of a suppressor (commonly referred to as a silencer) which allows the operator to better conceal themselves from their target by reducing the report of their firearm. It also allows the attachment of some flash suppressors with the resultant effect mentioned previously.

98. **Buffer tube, arm brace, or the like.** Attachment of a brace to a rifle caliber pistol effectively mimics the characteristics of a short-barreled rifle (a type of weapon restricted under the National Firearms Act) as it can allow the operator to fire it from the shoulder increasing stability while maintaining concealability. A buffer tube is the rearward part of an AR-15/M16 type rifle or pistol which can be tucked between the arm and torso to provide stability when firing from positions other than the shoulder. Although there are many AR type pistols that feature a buffer tube there are also those that do not.

99. None of the features I just described in paragraphs 91-98 are necessary for a firearm to function. None of them are necessary for a firearm to be an effective self-defense weapon. Many semi-automatic rifles, pistols, and shotguns have none of these features, as I discuss further below. The firearms that do have these features are often imitating military assault rifles like those I described in Part I above, with the only difference being the absence of select-fire in civilian versions.

A. Semi-automatic Rifles Regulated by PICA

i. AR Type Rifles

100. In recent years, there has been an increase in the popularity and availability of semi-automatic rifles with features initially designed (or patterned after those designed) for a military purpose. AR type rifles—rifles patterned on the AR-15 design developed by Eugene Stoner in the 1950's and subsequently adopted by the U.S. military as the M16 and, later, M4—are a prime example. Firearms manufacturers clearly mention the military origin of these weapons in promoting and marketing them. For example, Smith & Wesson's line of AR type rifles is called the "M&P" for "Military & Police". As shown below, the Smith & Wesson M&P line duplicates the characteristics and capabilities of the military's M4 rifle in every way except select-fire capability and a slightly longer barrel⁵⁵:

⁵⁵ Smith & Wesson, M&P15 Sport III, factory specification sheet, available at: https://assets.contentstack.io/v3/assets/bltb61dc3c40854cd9/bltbc39c83c4f7b124f/65ddf8de37599961bf70adad/13807_mp15_Sport3_specsheets.pdf



101. As depicted above, this Smith & Wesson M&P Sport II has many of the features included in PICA's definition of an "assault weapon". It is a semi-automatic, magazine-fed rifle that also has: a pistol grip, a barrel shroud, a flash suppressor, and an adjustable stock. Like the military's M16 and M4 series rifles, the Smith & Wesson M&P Sport II is chambered in 5.56 mm NATO caliber ammunition.

102. The "NATO" in 5.56mm NATO caliber refers to the North Atlantic Treaty Organization, because it is one of the standardized calibers used by countries in the NATO military alliance. The 5.56mm NATO caliber is very similar to .223 Remington cartridges, and many AR type rifles sold in the civilian market use one or both.⁵⁶ The table below shows examples of AR

⁵⁶ 5.56mm ammunition can be fired in a rifle chambered in that caliber. A rifle chambered in 5.56mm is also capable of firing .223 caliber ammunition (as the bullet diameter for both calibers is essentially identical). However, although it can physically be done, it is not recommended that 5.56mm ammunition be fired in rifles chambered for .223 caliber due to pressure differences and slight dimensional differences between the two cartridges. Some manufacturers offer

type rifles offered by top U.S. rifle manufacturers, all of which are chambered in 5.56mm and/or .223 caliber:

CURRENT AR-15-TYPE MODELS FROM MAJOR MANUFACTURERS



Ruger AR556 (5.56mm NATO)⁵⁷



Springfield Armory Saint M-Lok AR-15 Rifle (5.56mm NATO)⁵⁸



Smith & Wesson M&P 15 Sport III (5.56mm NATO)⁵⁹

rifles with “.223 Wylde” chambers, which are marketed as better supporting both 5.56mm and .223 caliber ammunition in the same rifle and barrel configuration.

⁵⁷ Image source: Ruger, <https://ruger.com/products/ar556/specSheets/8500.html>

⁵⁸ Image source: Springfield Armory, <https://www.springfield-armory.com/ar-series/saint-ar-15-rifles/saint-556-m-lok-ar-15-rifle-pic-gas-block/>

⁵⁹ Image source: Smith & Wesson, <https://www.smith-wesson.com/product/mp-15-sport-iii>



RKGuns 
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Sports South

Diamondback DB15 (5.56mm NATO)⁶⁰



Sig Sauer M400 TREAD (5.56mm NATO)⁶¹



Daniel Defense MK12 (5.56mm NATO)⁶²



Colt AR15 A4 (5.56mm NATO)⁶³

⁶⁰ Image source: Diamondback Firearms, <https://diamondbackfirearms.com/portfolio/db15-16-carbon-series-w-15-mlok-rail-5-56-nato-dark-grey-rural-king-sports-south-exclusive/>

⁶¹ Image source: Sig Sauer, <https://www.sigsauer.com/m400-tread.html>

⁶² Image source: Daniel Defense, <https://danieldefense.com/mk12.html>

⁶³ Image source: Colt, https://www.colt.com/detail-page/msr/?attribute_pa_variant=ar15a4-rifle

103. Essentially the semi-automatic rifles classified as “assault weapons” under PICPA, like the AR type rifles shown above, are direct developmental descendants of military weapons designed for use in combat. The “civilian” AR-15 type rifles in .223/5.56mm retain the same performance characteristics (in terms of muzzle velocity, range, etc.) as does the military M16 and its variants (M16A2, M4 etc.).

104. 5.56mm NATO and .223 caliber ammunition are high velocity cartridges developed in the 1950's in part for use in the original AR-15 and M16 rifles. They are “centerfire cartridges”. Although the diameter of the .223 projectile/bullet is only slightly greater (approximately the width of a human hair) than a .22 caliber cartridge, it is a vastly more powerful cartridge in terms of muzzle velocity and range. Here is a side-by-side comparison of .223 (left) and .22 caliber cartridges (right) with a quarter for size reference:



105. Common bullet weights for .223/5.56mm caliber projectiles are 50 to 62 grains + or - (0.11 to 0.14 ounces)—heavier than .22 caliber projectiles. Common muzzle velocities are approximately 3200 to 3500 FPS—about three times as fast as .22 LR (long rifle) caliber

projectiles. A heavier bullet and increased velocity equate to more of the cartridge's energy being transferred to the target (muzzle energy).⁶⁴

106. All of the AR-15 models from major rifle manufacturers shown in the chart above, "Current AR-15-Type Models from Major Manufacturers," are sold with 30-round magazines. Although manufacturers sometimes call this capacity "standard" for AR-15-type rifles, that has not always been the case.

107. While detachable magazines are available with varying capacities from 5 to 100 rounds, high capacity magazines are not an evolutionary firearms development initially designed or intended for the civilian marketplace. The lineage of high capacity detachable magazines can be traced directly to a military heritage. Magazine-fed light machineguns developed or deployed prior to and during World War I and thereafter refined and improved the capability and reliability of this type of feeding mechanism on a large scale. During World War II, the U.S. M1 .30 caliber carbine featured a detachable magazine. However, that rifle was intended for use by rear echelon support personnel. Frontline soldiers and Marines were issued the M1 Garand rifle in .30-06 caliber with an 8-round internal magazine. It was not until the late 1950's that the U.S. military adopted a front-line rifle (the M14 discussed in Part I above) with a 20-round detachable magazine.

108. The ability to fire an increased quantity of cartridges without reloading increases the lethality and effectiveness of small arms in combat, or the military would not have incorporated this feature. Less time required to reload can equate to more time spent acquiring targets or shooting. As stated previously, form follows function in regard to equipment designed and intended for military use.

⁶⁴ The results of the National Rifle Association (NRA) *American Rifleman* magazine's test of the U.S. Army's new 5.56mm cartridge (M855A1) in 2014, which illustrates this, are published here:

<https://www.americanrifleman.org/content/testing-the-army-s-m855a1-standard-ball-cartridge/>

109. The military's need for magazines that allowed rapid fire without reloading was not replicated in early civilian AR-15s. When Colt began producing a semi-automatic version of the M16 (the "Colt AR-15 Sporter" mentioned in Part II above) for sale to the public, it was sold with two five round magazines. It was not sold with the 20 round magazines issued with military contract M16's. An early advertisement for the Colt Sporter with a 5-round magazine is shown below:⁶⁵

**COLT AR-15 SPORTER
SEMI-AUTOMATIC RIFLE**
.223 CALIBER

Colt's answer to the demand for a semi-automatic version of the AR-15 automatic rifle purchased by The United States Armed Forces. Painstaking engineering redesign efforts have resulted in a Government-approved conversion of the Colt AR-15 automatic rifle without sacrificing any performance or weight characteristics. The semi-automatic AR-15 Sporter weighs only 6.3 pounds. Its recoil is light and barrel rise minimal.

MODEL R-6000 **RETAIL PRICE^{*}** **\$189.50**

Lightweight • Extremely accurate • Easy to handle • Straight line construction — barrel, bolt, recoil buffer unit and stock assembled in a straight line • Rapid semi-automatic fire is more controllable than with rifles of commercial design • Simple to maintain.

CALIBER	BARREL LENGTH	OVERALL LENGTH	CAPACITY	SIGHTS	SAFETY	WEIGHT
.223	21"	39"	5 rounds	Double tang rear peep sight adjustable for windage. Post type front sight adjustable for elevation.	Rotary safety— selector lever	Approx. 6½ lbs.

^{*}The suggested retail price of the Sporter is \$189.50 and includes two magazines (each blocked for five rounds), sling, flash suppressor, rubber recoil pad, cleaning rod assembly, cleaning brush, and the Colt AR-15 Sporter Operation and Maintenance manual.

⁶⁵ Image source: <https://thecoltar15resource.com/1964-catalog/>

110. “Initially, Colt simply added a five round limitation spacer to the 20-round magazine.”⁶⁶ Colt continued to include 5 round magazines with their AR-15 type rifles as late as 1987, as shown in this Colt publication⁶⁷:

MODEL NO.	MODEL	CALIBER	BBL LENGTH (inches)	FINISH	APPROX. WEIGHT (lbs.)	O/A LENGTH (inches)	SIGHT RADIUS (inches)	ROUNDS MAG.
R6600DH	AR-15A2 DELTA H-BAR w/scope and acces.	223 Rem (5.56mm)	20	M	10	39	19.75	5
R6600	AR-15A2 H-BAR	223 Rem (5.56mm)	20	M	8.0	39	19.75	5
R6500	AR-15A2 SPORTER II	223 Rem (5.56mm)	20	M	7.5	39	19.75	5
R6420	AR-15A2 CARBINE	223 Rem (5.56mm)	16	M	5.8	35 extended 32 closed	14.5	5



Rifles



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111. Magazine capacity does not affect the operability of a firearm. Firearms originally designed to utilize magazines with a maximum capacity exceeding that regulated under PICA (10 rounds in the case of semi-automatic rifles or 15 rounds for pistols) will function as designed with a magazine with a smaller maximum capacity.⁶⁸

112. In fact, many of the manufacturers that make and sell the AR-15-style rifles listed in the chart above, “Current AR-15-Type Models from Major Manufacturers,” offer those same AR-15-style rifles with “compliant” magazines. “Compliant” magazines refers to magazines with a capacity of 10-rounds or less that comply with laws that ban rifle magazines with capacities above 10 rounds. The following AR-15-style rifles from the chart above are also sold with “compliant” magazine options: Ruger AR-556,⁶⁹ Springfield Armory Saint 5.56 M-Lok AR-15 Rifle,⁷⁰ Smith &

⁶⁶ Bartocci, Christopher R., *The Black Rifle II* (Collector Grade Publications 2004), p. 263.

⁶⁷ Colt Industries, *Colt Firearms 1987 Catalog* (Colt Industries 1986), p. 15.

⁶⁸ PICA also prohibits semi-automatic rifles with a fixed magazine that has a capacity greater than 10 rounds, with an exception for tubular magazines used with .22 caliber rimfire ammunition. 720 ILCS 5/24-1.9(a)(1)(B). Based on my experience, semi-automatic rifles with a fixed magazine of more than 10 rounds are not common. From a technical perspective, however, there is no reason a fixed magazine could not be made to have a capacity of 30, 50, 100, or even more rounds depending on caliber.

⁶⁹ Ruger, <https://ruger.com/products/ar556/specSheets/8511.html>

⁷⁰ Springfield Armory, <https://www.springfield-armory.com/ar-series/saint-ar-15-rifles/saint-556-m-lok-ar-15-rifle-compliant/>

Wesson M&P Sport III Series (HI and OR),⁷¹ Diamondback DB 15,⁷² Sig Sauer M400,⁷³ and the Daniel Defense MK12.⁷⁴

113. It is worthy of note here that PICA does not ban all semi-automatic rifles or even all semi-automatic rifles chambered in .223/5.56mm NATO. It is also worth noting that PICA's magazine capacity limit does not affect many popular hunting rifles. Generally speaking, modern semi-automatic rifles that are designed, manufactured and marketed as "hunting rifles" traditionally have an internal magazine capacity of less than 10 rounds, depending on caliber. For example the Browning BAR, a popular semi-automatic rifle in .30-06 caliber as currently manufactured has an internal magazine capacity of 4 rounds. The Remington Model 700, a popular bolt action hunting rifle, has a magazine capacity of between 3 to 4 rounds depending on caliber.

114. Many popular hunting rifles are also bolt action and not regulated by PICA. A bolt action rifle is generally considered to be more accurate than a semi-automatic as there are fewer internal mechanisms in motion than a semi-automatic rifle. Bolt action rifles are often heavier than semi-automatic rifles of the same caliber and have a slower effective rate of fire as they require manual manipulation of the bolt to extract the spent cartridge case and reload for a subsequent shot. Most hunting uses for a rifle prioritize getting a single shot on target at long range. Experienced hunters typically have no need for the rapid fire allowed by a semi-automatic, magazine-fed rifle with a 30-round magazine. In fact, in many states, hunting regulations limit magazine capacity.

⁷¹ Smith & Wesson, <https://www.smith-wesson.com/product/mp-15-sport-iii-10rd>

⁷² Diamondback Firearms, <https://diamondbackfirearms.com/portfolio/db15-16-carbon-series-w-15-mlok-rail-5-56-nato-black-ca-compliant/>

⁷³ Sportsmans Warehouse, Sig M400 Tread – California Compliant, <https://www.sportsmans.com/shooting-gear-gun-supplies/modern-sporting-rifles/sig-m400-tread-556mm-nato-16in-black-anodized-semi-automatic-modern-sporting-rifle-101-rounds-california-compliant/p/1682669>

⁷⁴ RifleGear, Daniel Defense DDM4 MK12 – CA, <https://www.riflegear.com/p-19785-daniel-defense-ddm4-mk12-556mm-18-rifle-black-ca.aspx>

115. The magazine-fed, semi-automatic AR type rifles available for purchase by the public are, save the lack of select-fire capability, identical copies of military firearms. As noted, they retain a number of features originally designed to maximize their effectiveness in battle.

116. The absence of select-fire is not even a significant difference. Several devices are readily available to firearms owner to enable increased rates of fire—rates approaching full-automatic fire. Some of the most readily available include:

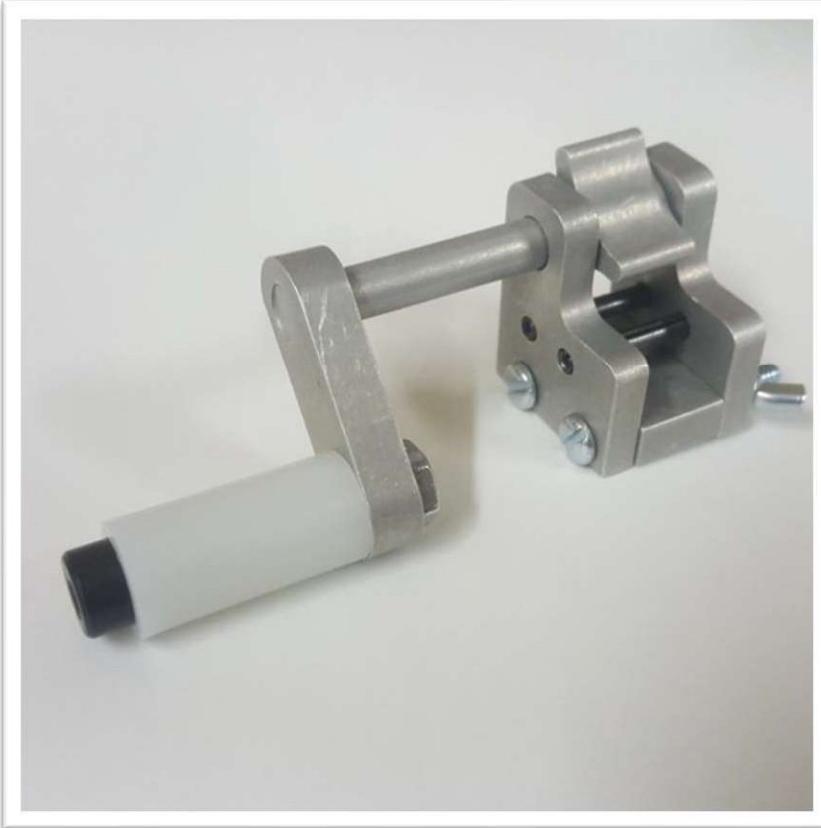


a. Binary triggers: Stated simply a binary trigger is a device which, when installed in a semi-automatic rifle, allows the operator to fire one shot when pulling the trigger towards the rear and a second shot upon releasing the trigger. With a binary trigger system is installed, the operator is theoretically capable of increasing the effective rate of fire by at least 100%. When fitted to a semi-automatic AR type rifle, a shooter can reasonably expect to attain an effective rate of fire of between 120 to 250+ rounds per minute.

An example of a binary trigger system is the Franklin Armory BFSIII AR-C1, shown above.⁷⁵ An online review of how the BFSIII operates states: “What is actually happening is an engagement of the sear and hammer. While you are in binary mode you pull and hold the trigger to release the hammer for the first shot. The round fires

⁷⁵ Image source: <https://franklinarmory.com/shop/binary-triggers/franklin-armory-bfsiii-ar-c1/>

and the bolt cycles back to reset the hammer. The BFSIII trigger has a second sear engagement that holds the hammer back and when you let the trigger move forward, it release (sic) the hammer again and fires the second round.”



b. Trigger cranks: Another type of device designed and marketed to simulate fully automatic fire are collectively known as “Trigger Cranks”. One of the better known examples of these is the “Gat Crank,” pictured above, manufactured and/or marketed by Two Z Precision.

As the name implies, these are devices that can be attached to the trigger guard of a semi-automatic rifle. The design consists of a crank mechanism which drives a cam designed to be placed against the trigger of the rifle. The crank drives the cam which, being irregularly shaped, repeatedly pushes against the trigger as the crank is turned to fire the rifle. In the case of the Gat Crank, the rifle will fire three rounds for each full revolution of the crank handle.

Depending on the skill and comfort level of the operator, a trigger crank can allow a shooter to attain a cyclic rate nearly equivalent to a fully automatic machinegun.



c. Bump stocks/Slide fire stocks: Another device which simulates fully automatic fire in semi-automatic rifles is a “Bump Stock” or “Slide Fire Stock.” An image of a bump stock from ATF’s website is shown above.⁷⁶ These devices replace a standard rifle stock with a combination buttstock and pistol grip. This device utilizes the recoil generated by the discharge of the firearm to bring a shooter’s trigger finger rapidly and repeatedly in contact with the trigger resulting in cyclic rates equal to those in fully automatic machineguns.

There are, and have been, similar designs manufactured and sold under names like “Slide Fire,” . “Bump Fire,” and “Akins Accelerator.” All function in a similar fashion.

117. Bump stocks attached to AR type rifles equipped with high capacity magazines were used in the deadliest mass shooting in U.S. history, the October 2017 Las Vegas mass shooting. An article by the *New York Times*, based on an analysis of acoustic evidence during the shooting, estimates that the shooter, Steven Paddock, fired 90 rounds in one ten second time frame during the event.⁷⁷ For that particular rifle, that would equate to a cyclic rate of 900 rounds per minute—a cyclic rate higher than the rates listed for the fully automatic M16A1 and M16A4 in the U.S. Army’s 2008 M16/M4 manual referenced in Part I above.

⁷⁶ Image source: <https://www.atf.gov/rules-and-regulations/bump-stocks>

⁷⁷ Buchanan, Larry, “Nine Rounds a Second: How the Las Vegas Gunman Outfitted a Rifle to Fire Faster,” *New York Times* (Oct. 5, 2017), available at: <https://www.nytimes.com/interactive/2017/10/02/us/vegas-guns.html>

118. The argument that commercially available AR type rifles are somehow less dangerous or lethal simply because they fire only in semi-automatic mode is patently false. They retain the identical performance capabilities and characteristics (save full-automatic capability) as initially intended for use in combat.

ii. AK Type Rifles

119. The recent increase in the popularity and availability of semi-automatic rifles with features initially designed (or patterned after those designed) for a military purpose has also resulted in more semi-automatic versions of the AK-47/74⁷⁸ becoming available. Like the AR-15 and M16, the only difference between semi-automatic AK-47/74's and the AK-47/74's used by militaries around the world is select-fire capability.

120. As described in Part I above, the AK-47 was initially developed by and for the Russian (Soviet) military. Unlike the 5.56mm NATO cartridge used by the M16, the AK-47 has traditionally used a 7.62x39mm cartridge. Many of the semi-automatic versions of the AK-47 and its subsequent variants on the civilian market use this caliber.

121. The 7.62x39mm cartridge is a larger caliber than the 5.56mm NATO and closer to the .30-06 caliber cartridge used in the M1 Garand, the standard-issue U.S. infantry rifle in World War II. The 7.62x39mm bullet is heavier than the 5.56mm NATO bullet. In many configurations, this increased weight translates to lower muzzle velocity, but higher muzzle energy, than the 5.56mm NATO. The following chart compares the ballistics of 7.62x39mm ammunition and 5.56mm NATO ammunition available in the civilian market as published in the 2024 edition of *Gun Digest*⁷⁹:

⁷⁸ The AK-47 was first adopted by the USSR in 1947. The AK-74, an updated variant, was subsequently developed and adopted by the USSR in 1974.

⁷⁹ Massaro, Philip P. (editor), *Gun Digest 2024*, 78th ed. (Caribou Media Group 2023), pp. 604 (OAG002188), 608 (OAG002192).

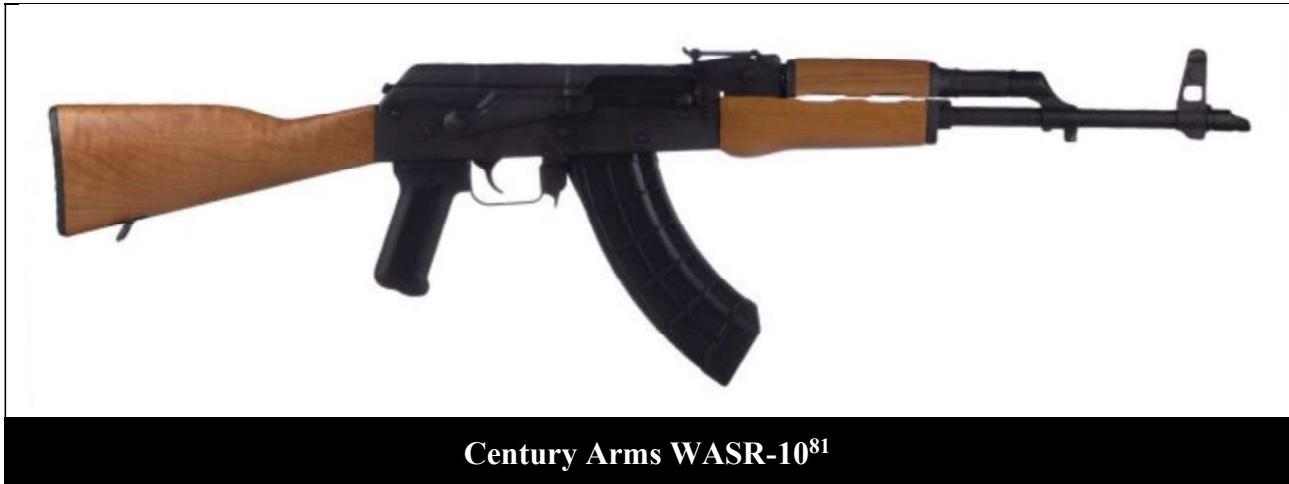
Cartridge	Bullet Weight (grains)	Velocity (FPS – feet/sec.)					Energy (foot-pounds)				
		Muzzle	100 yds.	200 yds.	300 yds.	400 yds.	Muzzle	100 yds.	200 yds.	300 yds.	400 yds.
5.56mm NATO	55	3130	2740	2362	2051	1750	1196	917	693	514	372
7.62x39mm	123	2360	2049	1764	1511	1296	1521	1147	850	823	459

122. As noted in Part I above, the relationship of caliber to lethality is complex. In adopting the 5.56mm NATO cartridge with the AR-15/M16, the U.S. military prioritized the velocity of the bullet over its mass. In using the 7.62x39mm cartridge in the AK-47 and its successors, the Russian military chose a bullet of higher mass but less velocity. Military and firearms experts have debated for years over which choice was better. But both weapons have significant firepower.

123. The semi-automatic versions of the AK-47 have the exact same firepower as their military counterparts, but without select-fire capability. Like the AR-15, manufacturers of semi-automatic AK-47's also tend to offer them with 30-round magazines. Examples of semi-automatic AK type rifles currently available in the U.S. market appear below (both chambered in 7.62x39mm with 30-round magazines):



⁸⁰ Image source: Palmetto State Armory, <https://palmettostatearmory.com/psak-47-gf5-forged-chf-classic-alg-red-wood-rifle.html>



Century Arms WASR-10⁸¹

124. The AK type semi-automatic rifles shown above are direct developmental descendants of the full-automatic AK-47/74 and similar military weapons designed for use in combat. The argument that commercially available AK type rifles are somehow less dangerous or lethal simply because they fire only in semi-automatic mode is patently false. They retain the identical performance capabilities and characteristics (save full-automatic capability) as initially intended for use in combat. And, as with AR type semi-automatic rifles, AK type semi-automatic rifles can be modified with devices like binary triggers, trigger cranks, and bump stocks to simulate full-automatic fire.

B. .50 Caliber Rifles and .50 BMG Caliber Ammunition

125. PICA also prohibits .50 caliber rifles and .50 BMG caliber ammunition.⁸² Rifles in this caliber, such as the Barrett M107A1 and Barrett Model 82A1 (both pictured below), were initially developed for military anti-material use against vehicles, lightly armored targets and long range sniping against enemy combatants:

⁸¹ Image source: Century Arms, <https://www.centuryarms.com/wasr-10-series>

⁸² 720 ILCS 5/24-1.9(a)(5)-(6), (b), (c).



126. .50 caliber rifles such as those produced by Barrett and others are accurate at extreme ranges up to 3000 yards +. For example, in 2017 a Canadian Armed Forces sniper killed an ISIS militant in Iraq at a distance of over 3800 yards utilizing a bolt action McMillan TAC-50, .50 BMG caliber rifle.⁸⁵

127. The “BMG” in the .50 BMG caliber refers to the M2 “Browning Machine Gun” that has been used by the U.S. military since World War II. The illustration below shows a .50 BMG cartridge in comparison to some of the other calibers discussed in this report⁸⁶:

⁸³ Image source: Barrett, <https://barrett.net/products/firearms/m107a1/>

⁸⁴ Image source: Barrett, <https://barrett.net/products/firearms/model-82a1/>

⁸⁵ Image source: Bunch, Ashley, “Canadian sniper crushes world record for longest confirmed kill in military history, reports say,” *Military Times* (Jun. 22, 2017), available at: <https://www.militarytimes.com/news/your-military/2017/06/22/canadian-sniper-crushes-world-record-for-longest-confirmed-kill-in-military-history-reports-say/>

⁸⁶ Image source: “Ultimate Rifle Caliber Comparison,” *Reload Your Gear* (May 5, 2022), available at: <https://reloadyourgear.com/ultimate-rifle-caliber-comparison/>



128. The .50 BMG bullet is much larger than the 5.56mm NATO, the .308, the .30-06, or the 7.62x39mm calibers. *Gun Digest 2024* lists the bullet weight of the .50 BMG caliber bullet at 624 grains: over 11 times heavier than a 5.56mm NATO caliber bullet and 5 times heavier than a 7.62x39mm caliber bullet.⁸⁷ According to the ballistics information in *Gun Digest 2024*,⁸⁸ the muzzle energy of a .50 BMG bullet is also 10 times greater than a 5.56mm NATO caliber bullet and nearly 8 times greater than a 7.62x39mm caliber bullet.

129. The following chart compares the ballistics of .50 BMG caliber ammunition to 7.62x39mm ammunition and 5.56mm NATO ammunition available in the civilian market as published in *Gun Digest 2024*⁸⁹:

⁸⁷ *Gun Digest 2024*, pp. 604 (OAG002188), 608 (OAG002192), 613 (OAG002197).

⁸⁸ *Gun Digest 2024*, pp. 604 (OAG002188), 608 (OAG002192), 613 (OAG002197).

⁸⁹ *Gun Digest 2024*, pp. 604 (OAG002188), 608 (OAG002192), 613 (OAG002197).

Cartridge	Bullet Weight (grains)	Velocity (FPS – feet/sec.)					Energy (foot-pounds)				
		Muzzle	100 yds.	200 yds.	300 yds.	400 yds.	Muzzle	100 yds.	200 yds.	300 yds.	400 yds.
5.56mm NATO	55	3130	2740	2362	2051	1750	1196	917	693	514	372
7.62x 39mm	123	2360	2049	1764	1511	1296	1521	1147	850	823	459
.50 BMG	624	2952	2820	2691	2566	2444	12,077	11,028	10,036	9125	8281

130. As I noted in Part I, the more energy a bullet can transfer to the target, the more effective it will likely be in causing damage or death. As shown in the chart above, the amount of energy a .50 BMG bullet has at 400 yards is more than five times the maximum energy of either the 5.56mm NATO bullet or the 7.62x39mm bullet leaving the muzzle (0 yards). I cannot imagine a self-defense situation in the civilian environment that would require that amount of energy (8281 foot-pounds) from a bullet at 400 yards.

C. PICA-Regulated vs. Unregulated Semi-Automatic Pistols

i. PICA-regulated semi-automatic pistols are a distinct sub-category of handguns

131. Many, many handgun models on the market today do not have the features listed in PICA's definition of "assault weapon."⁹⁰ In other words, handgun models with the features listed in PICA are very much the exception, not the rule.

132. I understand that revolvers, a large sub-category of handguns, are categorically excluded from PICA.⁹¹ According to ATF data from 2021 (which is summarized in the National Shooting Sports Foundation's 2023 report "Firearms Production in the United States"), handgun

⁹⁰ As listed in 720 ILCS 5/24-1.9(a)(1)(C), in this section of my report, I am specifically referring to semi-automatic, magazine-fed pistols that also have one or more of the following: a threaded barrel, a second pistol grip, a barrel shroud, a flash suppressor, or a buffer tube or arm brace.

⁹¹ By "revolvers," I am referring to handguns as opposed to shotguns with revolving cylinders, which I address separately in this report.

manufacturers in the U.S. manufactured 1,159,908 revolvers.⁹² According to ATF data, these 1,159,908 revolvers made up 14.6% of all handguns manufactured in the U.S. in 2021.⁹³

133. Semi-automatic pistols make up the largest share of handguns manufactured and sold in the U.S. Based on the handgun production figures in NSSF's report, in 2021, 90% of handguns manufactured in the U.S. were produced by the following 15 companies:

- i. Smith & Wesson
- ii. Sig Sauer
- iii. Ruger
- iv. Glock
- v. Taurus
- vi. Kimber
- vii. SCCY
- viii. Springfield Armory
- ix. FN America
- x. Beretta
- xi. Kel Tec
- xii. Bond Arms
- xiii. Strassells Machine Inc. (Hi-Point Firearms)
- xiv. Shadow Systems
- xv. Israel Weapons Industry (IWI)

Out of these 15 manufacturers, all but one offer multiple semi-automatic pistol models. Only Bond Arms, which specializes in one- and two-shot derringers, does not.

134. It is worth noting that I do not have company-level production figures from firearms manufacturers outside the U.S. However, many foreign firearms manufacturers (Glock, Beretta, FN, and Taurus, for example) have U.S. subsidiaries that manufacture handguns in the U.S. for the U.S. market. The largest of these foreign firearms manufacturers with U.S. subsidiaries—Glock, Beretta, FN, and Taurus—are included in the list above.

135. In order to summarize the types of semi-automatic pistol models currently available in the U.S. market, I reviewed the semi-automatic pistol listings in the *Gun Digest 2024*. Based on

⁹² ATF, "Annual Firearms Manufacturers and Export Report" (AFMER), 2021 (cited by NSSF, "Firearms Production in the United States," 2023, NSSF 000035–NSSF 000052, p. NSSF 000042).

⁹³ *Id.*

my experience, *Gun Digest* is widely relied upon by both firearms retailers and customers to understand what firearm models are currently being sold in the U.S. *Gun Digest* collects information from firearms manufacturers about the firearms models those manufacturers are currently producing and/or selling.⁹⁴

136. *Gun Digest 2024* includes approximately 171 listings in its “HANDGUNS Autoloaders, Service & Support” section from the top handgun manufacturers listed above.⁹⁵ Appendix A, which I have attached to this report, includes information about each of these approximately 171 listings. For some listings, *Gun Digest 2024* did not include caliber or magazine capacity information, the information listed was incomplete, or the listing did not include a visual image of the model. In those instances, I used information from the *Shooter’s Bible*, 115th edition (2023),⁹⁶ the manufacturer’s website or publications, or both to obtain caliber and magazine capacity information, and to review an image of the firearm. Based on my experience, *Shooter’s Bible* is widely relied upon by both firearms retailers and customers to understand what firearm models are currently being sold in the U.S. Information provided by a firearms manufacturer is also a reliable source for determining a firearm’s specifications.

137. Of the 171 or so semi-automatic pistol listings reflected in Appendix A, the vast majority are available without any of the features that would qualify them as an “assault weapon” under PICA, such as a threaded barrel, a second pistol grip, a barrel shroud, a flash suppressor, or a buffer tube or arm brace.⁹⁷

⁹⁴ *Gun Digest* does not typically include out-of-production models, even though out-of-production models may still be available in dealer stock or on the used-firearm market.

⁹⁵ The smallest two of the manufacturers, IWI and Shadow Systems, had no semi-automatic pistol listings in *Gun Digest 2024*. According to the *Shooter’s Bible*, 115th edition, Shadow Systems currently offers 3 semi-automatic pistol lines (D920 series in 9 mm, MR 920 series in 9 mm, XR920 in 9 mm), and IWI offers 2 semi-automatic pistol model lines (Jericho Enhanced in 9 mm; Masada in 9 mm). *Shooter’s Bible*, 115th ed. (Skyhorse Publishing 2023), pp. 374 (OAG002446), 408–09 (OAG002480–81).

⁹⁶ *Shooter’s Bible*, 115th ed., pp. 327–438 (OAG002399–2510).

⁹⁷ 720 ILCS 5/24-1.9(a)(1)(C).

138. Based on the descriptions and depictions of the 171 or so semi-automatic pistol listings reflected in Appendix A, a small handful are shown or described as having a threaded barrel for some (but not necessarily all) models: the Beretta Model 21A Bobcat (Covert model); the FN FNX-.45 Tactical; the Kel-Tec PLR-16; the Kel-Tec PLR-22; the Ruger SR22; the Sig Sauer P226; and the Springfield Armory XD-M Elite Series. Of these models offered with threaded barrels, *Gun Digest 2024*'s descriptions for several of them indicate that versions with unthreaded barrels are also available. Only the two Kel-Tec models—the PLR-16 and PLR-22—appear to be offered exclusively with a threaded barrel.

139. A threaded barrel allows for the attachment of a suppressor, also called a silencer. I understand from counsel for the State Defendants that silencers have been illegal in Illinois since before PICA was enacted.

140. Of the 171 or so semi-automatic pistol listings from the top handgun manufacturers, approximately four of those listings show or describe pistols that have the capacity to accept a detachable magazine outside the pistol grip: the Kel-Tec PLR-16; the Kel-Tec PLR-22; the Ruger Charger; and the Sig Sauer MPX Copperhead.⁹⁸ Pistols that accept detachable magazines outside of the pistol grip are often adapted from rifle designs. For example, *Gun Digest 2024* describes the Sig Sauer MPX as a “semi-auto AR-style gun”.⁹⁹ Similarly, the Kel-Tec PLR-16 is chambered in 5.56mm NATO—a typical caliber for AR type rifles, but an atypical caliber for most pistols.¹⁰⁰ *Gun Digest 2024* indicates that the Ruger Charger is adapted from Ruger’s 10/22 rifle.¹⁰¹

⁹⁸ The Sig Sauer MPX with a 4.5” barrel is sold with a folding stock that, based on the firearm’s overall length, may make it a short-barreled rifle under federal regulations. As such, Appendix A includes information specific to the Sig Sauer MPX Copperhead, which has a 3.5” barrel and no folding stock.

⁹⁹ *Gun Digest 2024*, p. 495 (OAG002127).

¹⁰⁰ *Gun Digest 2024*, p. 484 (OAG002116).

¹⁰¹ *Gun Digest 2024*, p. 492 (OAG002124).

141. The chart below includes images from manufacturers' websites showing pistols referenced in these four listings that accept magazines outside the pistol grip (left column). I have also included images from five semi-automatic pistol models without PICA's list of features from the same manufacturers as points of comparison (right column).

Pistols accepting detachable magazines outside the pistol grip (left) vs. Pistols accepting magazines in the pistol grip (right)	
	
Kel-Tec PLR-16¹⁰²	Kel-Tec P15¹⁰³
	
Kel-Tec PLR-22¹⁰⁴	Kel-Tec P15
	
Ruger Charger¹⁰⁵	Ruger EC9s¹⁰⁶
	 GUN Broker.com Top Seller
Sig Sauer MPX Copperhead¹⁰⁷	Sig Sauer P320 Nitron Compact¹⁰⁸

¹⁰² Image source: Kel-Tec, <https://www.keltecweapons.com/firearm/pistols/plr16/>

¹⁰³ Image source: Kel-Tec, <https://www.keltecweapons.com/firearm/pistols/p15/>

¹⁰⁴ Image source: Kel-Tec, <https://www.keltecweapons.com/firearm/pistols/plr22/>

¹⁰⁵ Image source: Ruger, <https://ruger.com/products/22Charger/specSheets/4923.html>

¹⁰⁶ Image source: Ruger, <https://ruger.com/products/ec9s/specSheets/3283.html>

¹⁰⁷ Image source: Sig Sauer, <https://www.sigsauer.com/sig-mpx-copperhead.html>.

¹⁰⁸ Image source: Sig Sauer, <https://www.sigsauer.com/p320-nitron-compact-3.html>.

142. The pistols in the right column are much more suitable for concealed carry than the pistols in the left column. Kel-Tec's website calls the Kel-Tec P-15 "an excellent choice for concealed carry."¹⁰⁹ Sig Sauer's website calls the Sig Sauer P320 Nitron Compact "ideal" for "many concealed carry scenarios."¹¹⁰ Ruger's EC9s also appears to be sufficiently compact to allow effective concealed carry. By contrast, the magazine placement for the pistols in the left column makes them much less suitable for concealed carry to the extent that effective concealment is possible at all. As a result, the pistols in the right column have a wider range of self-defense applications than the pistols in the left column.

143. Other than the handful of listings referencing threaded barrels, and the few references to models that accept detachable magazines outside of the pistol grip (including the two Kel-Tec models with both features), the remaining semi-automatic pistol listings in *Gun Digest 2024* describe semi-automatic pistols that are available without any threaded barrel, second pistol grip, barrel shroud, flash suppressor, or buffer tube or arm brace.

144. I acknowledge that I have not personally inspected each of the firearms referenced in the 171 listings from *Gun Digest 2024* included in Appendix A. Instead, I have relied upon published information from *Gun Digest 2024*, the *Shooter's Bible*, and manufacturers' websites. While additional information from an inspection or review of specifications from firearms manufacturers may result in slightly different figures than I have described above, the overall conclusion is likely to be the same: The handguns that PICA classifies as "assault weapons" are the exception, not the rule.

¹⁰⁹ Kel-Tec, <https://www.keltecweapons.com/firearm/pistols/p15/>

¹¹⁰ Sig Sauer, P320 Nitron Compact, <https://www.sigsauer.com/p320-nitron-compact-3.html>

ii. PICA's 15-round limit for handgun magazines

145. Based on the capacity information available from the sources I relied upon, nearly all of the semi-automatic pistols from top handgun manufacturers listed in *Gun Digest 2024* are available with magazines at or under PICA's 15-round limit for handgun magazines.¹¹¹ Out of the approximately 171 semi-automatic pistol listings from the top handgun manufacturers in Appendix A, there were only 11 listings where I was unable to find factory-issued magazines (magazines from the same manufacturer of the pistol) for those pistols with a capacity of 15 rounds or less.

146. Many manufacturers of semi-automatic pistols offer different capacity magazines that can be used in the same pistol model. For example, for a Glock 26, a 9mm semi-automatic pistol, it is possible to purchase 10-, 12-, 15-, 17-, 19-, and 33-round magazines from Glock that will all work in that model.¹¹² According to Glock's website, the "standard" capacity for the Glock 26 is a 10-round magazine.¹¹³

147. Glock is not unique in offering multiple magazines in different capacities that can be used in the same semi-automatic pistol model. As Appendix A reflects, all of the manufacturers included have at least some semi-automatic pistol models with multiple magazine capacity options.

148. In some instances, the magazine capacity for a particular semi-automatic pistol may vary based on the caliber of ammunition selected. For example, the Smith & Wesson SW 1911 is offered in either .45 ACP or 9mm caliber. The standard magazine for the full-size Smith & Wesson SW 1911 chambered in .45 ACP is 7 rounds; the standard magazine for the full-size 9mm variant is 10 rounds.¹¹⁴

¹¹¹ 720 ILCS 5/24-1.10.

¹¹² Glock, <https://us.glock.com/en/pistols/g26>

¹¹³ Glock, <https://us.glock.com/en/pistols/g26>

¹¹⁴ Smith & Wesson, <https://www.smith-wesson.com/product/sw1911-178047>

149. Many manufacturers also offer a 10-round magazine option for a semi-automatic pistol model even when the “standard” magazine (as determined by the manufacturer) for that model may have a higher capacity (15 or 17 rounds, for example). Manufacturers often call these models with 10-round magazines “compliant” or “state compliant” versions. “Compliant” or “state compliant” in this context typically refers to a version of a firearm or magazine that complies with state-specific regulations, like the 10-round magazine capacity limit that applies in some states. It is worthy of note that PICA’s 15-round magazine capacity limit allows Illinois residents a greater range of options than residents in other states with a lower limit.¹¹⁵

150. Of the approximately 171 semi-automatic pistol listings from the top handgun manufacturers in *Gun Digest 2024*, there were only 10 listings where I could not find a 15-round or less factory-issued magazine option in the sources I relied upon. Those 10 listings are: the Glock 34; the Glock 45; the Glock 47; the Kel-Tec P17; the Kel-Tec P50; the Kel-Tec PLR-22; the Ruger American Competition; the Smith & Wesson M&P 5.7 Series; the Springfield Armory 1911 DS Prodigy; and the Taurus Model 92. It is important to note that for these 10 models, the firearms themselves would be able to accept a magazine with a capacity of 15 rounds or less, or a magazine that had been modified (such as with a limiter) to accept no more than 15 rounds, and still function. There are also likely to be magazines available from aftermarket magazine manufacturers, such as Magpul, that have a capacity of 15 rounds or less and that will work in these 10 firearm models.

151. For nearly all of the semi-automatic pistol models currently sold in the U.S. by top handgun manufacturers, there are magazines available with capacities of 15 rounds or less.

¹¹⁵ PICA also prohibits semi-automatic pistols with a fixed magazine that has a capacity greater than 15 rounds. 720 ILCS 5/24-1.9(a)(1)(D). Based on my experience, semi-automatic pistols with a fixed magazine of more than 15 rounds are not common. Similar to what I said about semi-automatic rifles with fixed magazines, from a technical perspective, there is no reason a fixed magazine for a pistol could not be made to have a very high capacity of 30, 50, 100, or even more rounds depending on caliber.

iii. AR Type and AK Type Pistols

152. As discussed above, many semi-automatic pistol models from the top handgun manufacturers in the U.S. are available without features included in PICA's "assault weapon" definition. There are manufacturers who produce and sell semi-automatic pistol models that have features included in PICA's "assault weapon" definition. Many of these semi-automatic pistol models have been adapted from AR and AK type rifle platforms. Other semi-automatic pistol models, such as the Heckler & Koch SP5K PDW pistol, have been adapted or developed from submachineguns used by military and police professionals around the world, but without the automatic-fire capability. Compared to the most popular handgun models on the market from the top handgun manufacturers, these AR type pistols, AK type pistols, and pistols adapted or developed from submachinegun designs are the exception, not the rule.

153. Below are images from manufacturers' websites showing an example of (from left to right) an AR type pistol, an AK type pistol, and a pistol adapted or developed from a 9mm submachinegun:



154. Information about a number of AR type pistols, AK type pistols, and other PICA-regulated pistols, such as semi-automatic pistol variants developed from submachinegun designs,

¹¹⁶ Image source: Patriot Ordnance Factory, <https://pof-usa.com/firearm/minuteman-pistol/>

¹¹⁷ Image source: Arsenal, <https://www.arsenalinc.com/usa/firearms/pistols/sam7k-series/sam7k-ak-pistol-us-made-furniture>

¹¹⁸ Image source: Heckler & Koch, <https://hk-usa.com/hk-models/sp5k-pdw/>

appears in Appendix B, which is attached to this report. The information in Appendix B comes from the *Shooter's Bible*, 115th edition.¹¹⁹ I relied on the *Shooter's Bible*, 115th edition, because it appears to have more information about models from smaller manufacturers than *Gun Digest 2024*. For purposes of Appendix B, I am generally accepting the *Shooter's Bible* classification of these firearms as “handguns”. Some AR type, AK type, and other semi-automatic pistol variants developed from submachinegun designs may in fact qualify as short-barreled rifles under federal regulations depending on their design, specifically if they feature shoulder stocks or arm braces. However, I have not independently assessed whether the firearms included in Appendix B qualify as short-barreled rifles under ATF regulations.

155. The AR type, AK type, and other semi-automatic pistol variants developed from submachinegun designs described in Appendix B tend to differ from most of the semi-automatic pistol models from top manufacturers listed in Appendix A in several notable ways.

156. Over half of the pistols in Appendix B are chambered in rifle calibers, such as the: 5.56mm NATO, .300 Blackout, .308 Winchester, 6.5 Creedmoor, and 7.62x39mm. Rifle caliber ammunition generally has higher muzzle velocity and muzzle energy than common pistol caliber ammunition, such as the 9mm, .380 ACP, .40 S&W, and .45 ACP.¹²⁰ Because of the greater energy generated by rifle caliber ammunition, rifle caliber rounds tend to generate more recoil. Ordinarily, the stock of a rifle allows a shooter firing a rifle caliber round from a rifle to absorb the recoil more easily through the shooter’s shoulder.

157. A pistol, unlike a rifle, is designed to be fired with one hand.¹²¹ The comparatively lesser amount of energy generated by pistol caliber ammunition typically translates to less recoil,

¹¹⁹ *Shooter's Bible*, 115th ed. (OAG002399–2510).

¹²⁰ *Gun Digest 2024*, “Average Centerfire Rifle Cartridge Ballistics,” “Centerfire Handgun Cartridge Ballistics,” “Rimfire Ammunition Ballistics,” pp. 604–18 (OAG002188-2202).

¹²¹ 18 U.S.C., § 921(A)(29); 27 CFR § 478.11.

which enables single-handed firing. When rifle caliber ammunition is used in a pistol, the recoil generated is essentially the same as if that ammunition had been fired from a rifle however it is more difficult to control due to the absence of a shoulder stock. As a result, rifle caliber pistols can be very hard for a shooter to control with one hand.

158. In order to account for the recoil generated by rifle caliber ammunition, many of the AR type pistols in Appendix B incorporate a buffer tube or arm brace. AK type pistols, and those developed from submachinegun designs, may incorporate an arm brace as well. By incorporating a buffer tube or brace, these pistol models mimic an essential attribute of a rifle—the ability to be shoulder-fired. In fact, as noted, “pistols” with buffer tubes, braces, and short stocks may actually be short-barreled rifles according to ATF regulations based on their specific dimensions.

159. The recoil generated by firing rifle caliber ammunition from a pistol also creates a greater potential for muzzle rise—the tendency of the front of the barrel to rise up after firing. Firing any ammunition rapidly while maintaining accuracy requires additional control. To counteract this muzzle rise, many of the pistols in Appendix B incorporate a barrel shroud, a magazine that attaches outside of the pistol grip, or both. A shooter can use the non-trigger hand to grip either the front of the magazine well or the barrel shroud to compensate for the muzzle rise. A second pistol grip attached to the front of the pistol can serve a similar function.

160. Many of the pistols in Appendix B also have higher magazine capacities than the pistols in Appendix A. The greater magazine capacities for the pistols in Appendix B mean that a shooter can fire more rapidly rounds with fewer pauses for reloading. When this increased firing capacity is combined with stabilizing features like an arm brace at the rear and a grip for the non-trigger hand at the front (foregrip), these types of pistols enable a shooter to fire rapidly while

maintaining accuracy (although a foregrip may classify the pistol as “any other weapon” according to ATF regulations).¹²²

161. Several of the features shared by many of the pistols in Appendix B—buffer tubes, arm braces, extended magazines that attach outside the pistol grip, a second pistol or other forward grip—make them impractical and unsuitable for concealed carry. As a result, they have fewer self-defense applications than the many, many popular pistols in Appendix A without these features that are far more suitable for concealed-carry. In short, the AR type pistols, AK type pistols, and some pistols developed from submachinegun designs in Appendix B may be fun to use for recreational shooting, but they are not the type of pistols one would choose for marksmanship competitions or everyday self-defense needs.

162. The types of pistols in Appendix B are also uncommon within the overall handgun market. Although I do not have access to model-level data from the manufacturers of the pistol models included in Appendix B, these manufacturers account for a very small fraction of overall U.S. handgun production. According to ATF’s 2021 firearm manufacturing data, the manufacturers included in Appendix B who reported their pistol production figures to the ATF¹²³ accounted for an aggregated total of 1.6% of U.S. handgun production for that year.

D. PICA-Regulated vs. Unregulated Semi-Automatic Shotguns

163. Many shotgun models on the market today do not have the features listed in PICA’s definition of “assault weapon.”¹²⁴ In other words, shotgun models with the features listed in PICA are very much the exception, not the rule.

¹²² ATF, “Adding a Vertical Fore Grip to a Handgun,” (May 4, 2006), available at: <https://www.atf.gov/firearms/docs/open-letter/all-ffls-may2006-open-letter-adding-vertical-fore-grip-handgun/download>

¹²³ Of the 26 manufacturers represented in Table B, I was not able to identify reported production figures in the 2021 ATF AFMER data from five of them. Four are international manufacturers (Chiappa Firearms, an Italian manufacturer; Charles Daly, a division of Chiappa Firearms; Bruger & Thomet, a Swiss manufacturer; and Sarsilmaz, a Turkish manufacturer). For the fifth (Red Arrow Firearms, Inc.), I was unable to find additional production data.

¹²⁴ As listed in 720 ILCS 5/24-1.9(a)(1)(C), in this section of my report, I am specifically referring to a threaded barrel, a

164. Shotguns currently make up a smaller share of U.S. firearm production than pistols, revolvers, or rifles. According to ATF data, shotguns made up about 5.4% of all firearms produced in the U.S. in 2021.¹²⁵ Many shotguns are also produced by international manufacturers and imported into the U.S. market. Despite more rifles being manufactured in the U.S. than shotguns in 2021, more shotguns were imported into the U.S. than rifles that year: 2,816,507 shotguns compared to 1,144,800 rifles according to NSSF's 2023 report "Firearms Production in the United States."¹²⁶ For example, Italian, Turkish, and Brazilian manufacturers import hundreds of thousands of shotguns into the U.S. each year.

165. There are several different types of manually operated shotguns: pump action shotguns, where the shooter uses the pump action to cycle a new shell into the chamber; over/under shotguns, where two barrels, each loaded with a shell, are stacked on top of one another; side-by-side shotguns, where two barrels, each loaded with a shell, are arranged horizontally; bolt-action shotguns, where a new shell is cycled into the chamber by operating the bolt; lever-action shotguns, where a new shell is cycled into the chamber by pulling a lever; and single-shot shotguns.

166. In each of these categories, there are a variety of shotgun models currently on the market as reflected in the following sections from *Gun Digest 2024*: "Pumps," "Over-Unders," "Side-by-Side," and "Bolt Action, Single Shot & Lever Action".¹²⁷ In total across these categories, *Gun Digest 2024* includes 169 listings of shotgun models. With one exception—a revolving shotgun called the Rossi Circuit Judge—the shotgun models in these categories are not the type of shotguns regulated by PICA.

second pistol grip, a barrel shroud, a flash suppressor, or a buffer tube or arm brace.

¹²⁵ ATF, "Annual Firearms Manufacturers and Export Report" (AFMER), 2021 (cited by NSSF, "Firearms Production in the United States," 2023, NSSF 000035–NSSF 000052, p. NSSF 000036).

¹²⁶ NSSF, "Firearms Production in the United States," 2023, NSSF 000035–NSSF 000052, p. NSSF 000047.

¹²⁷ *Gun Digest 2024*, pp. 534–49 (OAG002167–82).

167. *Gun Digest 2024* also includes another section titled “Shotguns - Autoloaders”. An “autoloader” shotgun is a semi-automatic shotgun. A semi-automatic shotgun fires a single shell each time the shooter pulls the trigger. Unlike with a pump, lever, or bolt action shotgun, the shooter does not have to do anything other than pull the trigger once to both fire a shell, eject the empty hull, and load another shell. The types of shotguns regulated by PICA are semi-automatic shotguns that also have one or more specific features, such as: a pistol grip, a thumbhole stock, a protruding grip for the non-trigger hand, a folding stock, a grenade launcher, a fixed magazine with a capacity greater than five rounds, or the capacity to accept a detachable magazine.¹²⁸

168. Many semi-automatic shotguns have none of the features listed in PICA’s definition of “assault weapon”. *Gun Digest 2024* includes 64 listings in the “SHOTGUNS Autoloaders” section. A substantial majority of the semi-automatic shotgun models reflected in these 64 listings are available without any of the features from PICA’s definition of “assault weapon”. Out of those 64 listings, a small handful are shown with a pistol grip, including: the Benelli M2 Turkey Edition; the Benelli Black Eagle III (SBE3); the European American Armory Akkar Churchill 220; and the J.P. Sauer & Sohn SL5 Turkey. But even for these models, the manufacturers offer versions without pistol grips.

169. In terms of capacity, out of the 64 listings in the “SHOTGUNS Autoloaders” section of *Gun Digest 2024*, there are only six models listed as having a capacity greater than five: the Mossberg 940 JM Pro (10 shells); the Mossberg 940 Snow Goose (12 shells); the Savage Renegauge Competition (9 shells); the Standard Manufacturing SKO-12 (10 shells with two- and five-shell options); the Standard Manufacturing SKO Shorty (10 shells with two- and five-shell options); and the Stoeger M3500 Waterfowl (10 shells). Even for these shotgun models, the manufacturers may offer versions with capacities of five shells or less.

¹²⁸ 720 ILCS 5/24-1.9(a)(1)(F).

170. Of the 64 listings in the “Shotguns - Autoloaders” section of *Gun Digest 2024*, there are two listings with models that have multiple features from PICA’s definition of “assault weapon”: the Standard Manufacturing SKO-12; and the Standard Manufacturing SKO Shorty. Both of these models are shown below:



171. Based on these images from Standard Manufacturing’s website,¹²⁹ both the SKO-12 and SKO Shorty have pistol grips and detachable magazines. The *Gun Digest 2024* listings for these models both refer to an “AR-style mag and bolt release.” Shotguns with AR style features like these are unusual compared to most shotguns on the market. As a point of comparison, here are semi-automatic shotgun models from Mossberg,¹³⁰ the leading U.S. shotgun manufacturer, that do not incorporate AR style features:



172. According to ATF data, Mossberg (which owns Maverick Arms, Inc.) led all U.S. shotgun manufacturers for 2021 with 292,944 shotguns manufactured—representing 43% of all

¹²⁹ Image sources: Standard Manufacturing, <https://stdgun.com/sko-12-12ga-semiautomatic-shotgun-18-7-8-barrel/>; Standard Manufacturing, <https://stdgun.com/sko-shorty-12ga-semiautomatic-shotgun-18-7-8-barrel/>

¹³⁰ Image sources: Mossberg, <https://www.mossberg.com/940-pro-field-85155.html>; <https://www.mossberg.com/935-turkey-81046.html>.

675,426 shotguns manufactured in the U.S. that year.¹³¹ Standard Manufacturing reported manufacturing 9,435 shotguns in 2021—representing 1.4% of total U.S. shotgun production that year.¹³²

173. The final section of shotgun listings in *Gun Digest 2024* is called “Military & Police”. The listings in the “Military & Police” section include a mix of pump-action and semi-automatic shotguns. Several of the semi-automatic shotguns in this section are patterned after military weapons. For example *Gun Digest 2024* describes the Kalashnikov Komp12 as based on the Russian Saiga series,¹³³ which itself is patterned after AK type rifles. Full-automatic variants are used by the Russian military. Below is an image of the semi-automatic Kalashnikov Komp12 from the manufacturer’s website¹³⁴:



174. The manufacturer, Kalashnikov USA, describes the Kalashnikov Komp12 on its website as follows: “As the name says, this is a shotgun for the battlefield.”¹³⁵

¹³¹ NSSF, “Firearms Production in the United States,” 2023, NSSF 000035–NSSF 000052, p. NSSF 000047.

¹³² NSSF, “Firearms Production in the United States,” 2023, NSSF 000035–NSSF 000052, p. NSSF 000047.

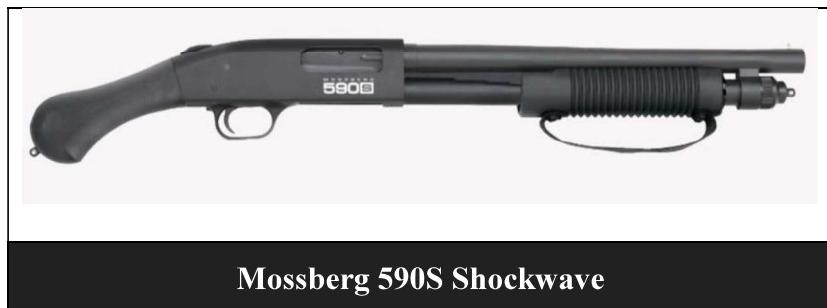
¹³³ *Gun Digest 2024*, p. 551.

¹³⁴ Image source: Kalashnikov USA, <https://kalashnikov-usa.com/product/komp12-12ga-competition-shotgun-kalashnikov-usa/>

¹³⁵ Kalashnikov USA, Komp12, <https://kalashnikov-usa.com/product/komp12-12ga-competition-shotgun-kalashnikov-usa/>

175. PICA also restricts shotguns with revolving cylinders. Such shotguns are known as “street sweeper” shotguns, and are of a design that has not been accepted or adopted for military or law enforcement use by any nation or agency that I am aware of. In terms of legitimate sporting use for either hunting or target shooting, or for self-defense, I cannot conceive of it having any utility. Shotguns of this type have been classified as a “destructive device” by ATF and are subject to additional restrictions under the National Firearms Act of 1934.¹³⁶

176. By contrast, the pump action Mossberg 590S Shockwave, which is not an “assault weapon” under PICA’s definition, is much more suitable for self-defense. Compared to the Kalashnikov Komp12, the Mossberg 590S Shockwave is much lighter and more maneuverable. Below is an image of the Mossberg 590S Shockwave from Mossberg’s website¹³⁷:



177. The type of shotguns that meet PICA’s definition of an “assault weapon” are a sub-category of shotguns. Many, many shotgun models are not semi-automatic—pump action, side-by-side, and over-under models continue to be widely popular. Even within the sub-category of semi-automatic shotguns, shotguns with “assault weapon” features under PICA are the exception, not the rule. And, in my opinion, there are many pump action shotgun models that are far better-suited for self-defense.

¹³⁶ ATF, ATF Ruling 94-2, available at: <https://www.atf.gov/file/55426/download>

¹³⁷ Image source: Mossberg, <https://www.mossberg.com/590s-shockwave-51601.html>

Part V: Self-Defense, Public Safety, and “Assault Weapons”

178. At numerous points throughout their complaints the Plaintiffs allege that self-defense is one of the primary reasons for the purchase of a firearm regulated by the Act.¹³⁸ It is my opinion that an AR-15, an AK-47 platform rifle, or other banned “assault weapon” is a poor choice for this task.

179. I have been asked on numerous occasions over the past 35 years what firearm I would recommend for home or self-defense. My recommendation is based upon my inquiry in return regarding the individual’s (and their family members’) personal experience and comfort level with firearms. In over 25-plus years, I have never recommended an AR-15 or AK-47 platform or other similar rifle as a home defense weapon.

180. Home defense and/or self-defense situations are rarely, if ever, lengthy shootouts at long ranges with extensive exchanges of gunfire. Many of the “assault weapons” banned under PICA were designed to be effective at battlefield ranges of up to 500 yards. The typical muzzle velocity of a .223 caliber bullet is 3200 FPS (+ or -). Projectiles travelling at velocities found in banned weapons pose a serious risk of over-penetration in most home construction materials such as gypsum board/sheet rock, and typical 2x4 lumber. When this cartridge was engineered for the AR-16/M16, it was intended to kill or incapacitate enemy combatants at distances of hundreds of yards, not dozens of feet.

181. In August 2014 the National Rifle Association’s *American Rifleman* magazine published an article by Stanton Wormley: “The AR-15 for Home Defense: Penetration Tests”.¹³⁹ Wormley conducted penetration tests on nine different types of .223/5.56mm ammunition by firing

¹³⁸ For example, see Complaint, ¶ 39, *Harrel v. Raoul*, 23-cv-00141-SPM (S.D. Ill.); Complaint, ¶ 33, *Barnett v. Raoul*, 23-cv-00209-SPM (S.D. Ill.).

¹³⁹ Wormley, Stanton, “The AR-15 for Home Defense: Penetration Tests,” *American Rifleman* (Aug. 5, 2014), available at: <https://www.americansrifleman.org/content/the-ar-15-for-home-defense-penetration-tests/>

them through simulated wall sections constructed of gypsum board/sheet rock and wooden 2x4 studs. When fired at a 90-degree angle to the walls all nine (including “frangible” rounds designed to disintegrate when hitting a hard surface) easily penetrated the wall section as well as water jugs placed three feet behind:

“But just how much energy did the penetrating projectiles carry? All the loads, including the Glaser, exploded one-gallon water jugs placed 3 feet behind the wall sections.”¹⁴⁰

182. The tests conducted by Wormley also included firing longitudinally through the wall sections resulting in the penetration of three successive 2” thick 2x4 studs by a number of the projectiles. These tests vividly highlight the inherent dangers of utilizing assault weapons as defined under PICA with high velocity ammunition in a home defense scenario.

183. Current U.S. Army issue 5.56mm caliber ammunition is capable of penetrating 3/8” hardened steel at 350 yards. Potential over-penetration in a confined environment is problematic in terms of risk to bystanders or family members outside the target location. Most jacketed commercially available .223/5.56mm ammunition has impressive penetration capabilities in this regard. Additionally, the (former) NATO issue M855 SS109 5.56mm is readily available for purchase by civilians. This ammunition was designed to penetrate up to 3mm of “soft”, (non-hardened) steel. This capability is certainly unnecessary and poses substantial risks to individuals in adjoining rooms, neighboring apartments, or other attached dwelling units.

184. During a stressful situation such as a home invasion or break in, there may be multiple steps required by the operator to bring the weapon from a safe condition to a firing condition. Manipulation of a charging handle, safety switch, or inserting a magazine may be

¹⁴⁰ *Id.* The “Glaser Safety Slug” was a type of pistol ammunition developed by CorBon Ammunition Inc. in 1974 for potential use by Federal Air Marshals. The bullet was specifically designed to avoid penetration of an aircraft fuselage in the event of a shooting situation while aloft. Glaser subsequently expanded their product line to include rifle caliber ammunition with an eye to limited penetration of materials.

difficult to accomplish under stress, particularly if the operator has not adequately trained or practiced with their firearm. Other family members may not be familiar with bringing the weapon to a firing condition or fail to complete adequate steps to do so under duress.

185. While employed as a Special Agent with ATF, the agency transitioned to an AR type rifle in the early 2000's. Each Agent was required to attend, and successfully complete, a one week/40 plus hour transition training class in order to familiarize themselves, and qualify, with the firearm. The training included repetitive live fire drills under stressful conditions. Additionally, we were required to requalify with these firearms quarterly and repeat the same drills as during the initial transition training. Nonetheless, I witnessed Agents make errors that resulted in a failure of the weapon to fire during those drills, even though those Agents had performed the drills repeatedly under stress. It is worth noting here that the M4 carbines issued to ATF Field Offices were select-fire rifles (i.e. machineguns capable of full-automatic fire) that were converted to semi-automatic fire only.

186. Pistols that are “assault weapons” under PICA are also a poor choice for home defense or personal protection. Due to their weight and length many assault pistols enumerated in PICA require two hands to effectively aim and shoot. (Certainly the same can be said for a rifle.) In a home defense situation, an individual may be required to use one hand to call 911 while attempting to operate a “two handed” firearm with one hand. Such a situation would also preclude the homeowner from utilizing their “non-gun hand” to pick up or guide a small child or vulnerable adult during such an event.

187. Additionally, I am not of the opinion that an abundance of ammunition is a substitute for weapons familiarization and shot placement. Repeated practice and shooting with your chosen firearm will make you a more effective deterrent than the capability to fire more rounds, should deadly force be required.

188. If the individual had a preference for shoulder-fired weapons, I have recommended a pump action 12-gauge shotgun (Remington 870, Mossberg 500 etc.) loaded with 00 Buckshot with a full-size shell or mini shell (depending on their comfort level with a shotgun) and stored with the “hammer dropped” on an empty chamber, safety off. The only action required to bring the shotgun from a safe unloaded condition to a firing condition is to work the pump action of the shotgun. The advantages of this type of firearm and storage condition are unmatched stopping power, low probability of over penetration (as compared to rifle caliber and velocity projectiles) and zero manipulation of safety mechanisms required in high stress situations. The loading/chambering process itself is an audible deterrent. Training and familiarization with this type of a firearm is simple and straightforward.

189. For a handgun, my first inclination is to recommend an eight-shot revolver in .38 caliber (similar to Smith & Wesson Model 627, Taurus Model 608, etc.) loaded with hollow point bullets. As with my rationale for recommending a pump action shotgun, there are no complicated safety mechanisms to manipulate in a high stress situation, low probability of over penetration, and ease of reloading with a speed loader should more than eight shots be required. Revolvers are also easier and less complicated for other family members to learn to operate, especially if they have less familiarity with firearms.

190. In terms of a carry handgun, I value concealability over ammunition capacity. The advantage of concealed carry is protection without broadcasting the fact. In a street robbery scenario, I believe the best course of action is to quickly extricate yourself from the “kill zone” and not engage in a protracted gunfight. When I was employed as a Special Agent with ATF, we were issued a Sig Sauer P229 in .40 S&W caliber as a primary duty weapon. We were also given the choice of a Sig Sauer P239 in .40 S&W or a five shot Smith & Wesson Model 640 in .357 Magnum as a backup firearm. When off duty, I carried the Smith & Wesson 640 and a speed loader

extensively as opposed to the P229. I found it easy to conceal and am of the opinion that 10 rounds was an adequate amount of ammunition to enable me, or myself and my wife, or child, to extricate myself from a street or retail location robbery should I encounter one. Consequently, I have most often recommended either a lightweight small revolver (Smith & Wesson Bodyguard, Ruger LCR, Smith & Wesson Model 36, 640 or variant) carried with a speed loader or a low profile small semi-automatic pistol (Sig Sauer P236 or P365, Ruger LCP, Colt Pocketlite, Glock 45 etc.) with a spare magazine.

191. Many of the firearms regulated by PICA were not designed, nor are they suitable, for home defense in short range close quarter situations. As discussed throughout this report, the types of firearms PICA classifies as “assault weapons,” including AR and AK type rifles in particular, are direct developmental descendants of military weapons designed for use in combat. The “civilian” AR-15 type rifles in .223/5.56mm retain the same performance characteristics (in terms of muzzle velocity, range, etc.) as does the military M16 and its variants (M16A2, M-4 etc.). According to the U.S. Army Manual discussed in Part I above, the maximum range of these rifles is 2650 to 3600 meters, and the maximum effective range, as discussed above, is 400 to 500 meters.

192. On the other hand, the firearms PICA classifies as “assault weapons” are capable of inflicting significant carnage upon civilians in a short period of time, particularly when used in conjunction with high capacity magazines. This has been tragically demonstrated by recent mass shootings such as the Pulse Nightclub in Orlando, Florida in 2016 (49 fatalities, 50+ wounded), the 2017 Las Vegas shooting (60 fatalities, 400+ wounded), the 2022 Uvalde Texas School shooting (21 fatalities, 17 wounded), and the July 4, 2022 shooting in Highland Park (7 fatalities, 48 wounded).

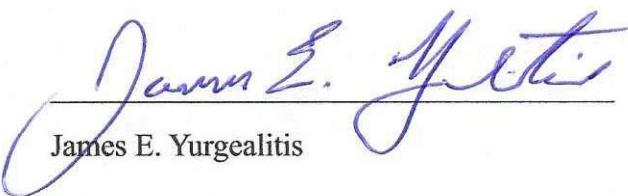
193. Rifle caliber “assault weapons” as prohibited under PICA also pose a significant risk to law enforcement officers. It has been my experience that soft body armor issued to most

uniformed officers has a “Level II” or “Level IIIA” National Institute of Justice (NIJ) protection rating.¹⁴¹ These two ratings are suitable for protection against most handgun bullets as those projectiles range up to a 1200 FPS (+ or -) velocity. Rifle caliber “assault weapons” (AR and AK type rifles) can, as stated previously in this report, achieve muzzle velocities of 3200 FPS (+ or -) which can readily penetrate Level II & IIIA body armor (as well as some Level III hard body armor, which is not universal standard-issue amongst law enforcement agencies nationwide). I have personally fired AK-47/74 type rifles (in 7.62x39mm caliber) as well as AR-15, HK G3, and HK G36 (in 5.56mm/.223 caliber) and FN FAL rifles (in .308 caliber) into Level II body armor at various ranges up to and including 25 yards. The projectiles (bullets) fired penetrated the front panels of those vests with ease. Not only do the firearms subject to PICA pose a threat to overall public safety, they increase the likelihood that first responders charged with stopping such a threat, or attending to wounded citizens, may be injured or killed in the performance of their duty.

¹⁴¹ National Institute of Justice, “Specification for NIJ Ballistic Protection Levels and Associated Test Threats,” NIJ Standard 0123.00 (Nov. 30, 2023), available at: <https://nij.ojp.gov/specification-nij-ballistic-protection-levels-and-associated-test-threats-nij-standard-012300>. The most recent NIJ standard, published in November 2023, changed the rating system. NIJ Level II has been replaced by NIJ HG1. NIJ Level IIIA has been replaced by NIJ HG2.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed on May 10, 2024 at MANCHESTER, MD.


James E. Yurgealitis

Appendix A
Semi-Automatic Pistol Models Available from Top Handgun Manufacturers in the U.S.

Row	Make/Model	Caliber	Magazine Capacity
1	Beretta Model 21A Bobcat	.22 LR	9
2	Beretta Model 80X Cheetah	.380	13
3	Beretta 92/96 A1 Series	9mm, .40 S&W	12, 15
4	Beretta Model 92FS	9mm	10
5	Beretta Model 92G Elite LTT Centurion/Compact	9mm	15
6	Beretta Model 92X Full Size/Compact/Centurion	9mm	15
7	Beretta Model 92XI SAO	9mm	15
8	Beretta Model 3032 Tomcat	.32 auto	7
9	Beretta M9 .22LR	.22 LR	10, 15
10	Beretta Model PX4 Storm	9mm, .40 S&W	10, 14, 17
11	Beretta Model PX4 Storm Sub-compact	9mm, .40 S&W	10, 13
12	Beretta Model APX Series	9mm, .40 S&W	10, 15, 17
13	Beretta Model M9	9mm	15
14	Beretta Model M9A1	9mm	10, 15
15	Beretta M9A4	9mm	10, 15
16	FN 502 Tactical	.22 LR	10, 15
17	FN 509 Series	9mm	10, 12, 15
18	FN FNX Series	9mm, .45 ACP	10, 14, 17
19	FN FNX .45 Tactical	.45 ACP	15
20	FN Five-Seven	5.7x28mm	10, 20
21	FN High Power	9mm	10, 17
22	Glock 17/17C	9mm	10, 17, 19, 24, 31, 33
23	Glock 19/19C	9mm	15, 17, 19, 33
24	Glock 20/20C 10mm	10mm	15
25	Glock 21/21C	.45 ACP	13
26	Glock 22/22C	.40 S&W	15, 17
27	Glock 23/23C	.40 S&W	13, 15, 17
28	Glock 24/24C	.40 S&W	10, 15, 17, 22

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Row	Make/Model	Caliber	Magazine Capacity
29	Glock 26	9mm	10, 12, 15, 17, 19, 33
30	Glock 27	.40 S&W	9, 11, 13, 15, 17
31	Glock 29	10mm	10, 15
32	Glock 30	.45 ACP	9, 10, 13
33	Glock 30S	.45 ACP	10
34	Glock 31/31C	.357 auto	15, 17
35	Glock 32/32C	.357 auto	13, 15, 17
36	Glock 33	.357 auto	9, 11, 13, 15, 17
37	Glock 34	9mm	17, 19, 33
38	Glock 35	.40 S&W	15, 17
39	Glock 36	.45 ACP	6
40	Glock 37	.45 ACP	10
41	Glock 38	.45 GAP	8, 10
42	Glock 39	.45 GAP	6, 8, 10
43	Glock 40	10mm	10, 15
44	Glock 41 Gen4	.45 ACP	13
45	Glock 42	.380 ACP	6
46	Glock 43	9mm	6
47	Glock 43X	9mm	10, 17
48	Glock 44	.22 LR	10
49	Glock 45	9mm	17
50	Glock 47	9mm	17
51	Glock 48	9mm	10
52	Hi-Point Firearms Model 9mm Compact	9mm	8
53	Hi-Point Firearms Model 380 Polymer	.380 ACP	8, 10
54	Hi-Point Firearms 40 and 45 SW/Polymer	.40 S&W, .45 ACP	8, 9
55	Hi-Point Firearms JXP10	10mm	10
56	Kel-Tec P11	9mm	10
57	Kel-Tec PF-9	9mm	7
58	Kel-Tec P15	9mm	15
59	Kel-Tec P17	.22 LR	16

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Row	Make/Model	Caliber	Magazine Capacity
60	Kel-Tec P32	.32 ACP	7
61	Kel-Tec P50	5.7x28mm	50
62	Kel-Tec P-3AT	.380 ACP	7
63	Kel-Tec PLR-16	5.56mm NATO	10
64	Kel-Tec PLR-22	.22 LR	26
65	Kel-Tec PMR-30	.22 Magnum	30
66	Kimber Micro Desert Night	.380 ACP	6
67	Kimber Micro Desert Tan	.380 ACP	6
68	Kimber Micro Eclipse	.380 ACP	6
69	Kimber Micro Raptor	.380 ACP	6
70	Kimber Micro Stainless	.380 ACP	6
71	Kimber Mircro Two Tone	.380 ACP	6
72	Kimber Covert Series	.45 ACP	7
73	Kimber Custom II	9mm, .45 ACP	7, 9
74	Kimber Custom TLE II	.45 ACP, 10mm	7
75	Kimber Micro 9	9mm	7
76	Kimber Stainless II	9mm, .45 ACP	7, 9
77	Kimber Pro Carry II	9mm, .45 ACP	7, 9
78	Kimber Sapphire Pro II	9mm	9
79	Kimber Raptor II	.45 ACP	7, 8
80	Kimber Ultra Carry II	9mm, .45 ACP	7
81	Kimber CDP II Series	9mm, .45 ACP	7
82	Kimber CDP	9mm, .45 ACP	7, 9
83	Kimber Eclipse II Series	.38 Super, 10mm, .45 ACP	8
84	Kimber Ultra CDP II	9mm, .45 ACP	7, 9
85	Kimber Stainless Ultra TLE II	.45 ACP	7
86	Kimber Super Jagare	10mm	8
87	Kimber KHX Series	9mm, .45 ACP	8
88	Kimber Aegis Elite Series	9mm, .45 ACP	7, 8, 9
89	Kimber EVO Series	9mm	7
90	Kimber Super Match II	.45 ACP	8
91	Ruger-57	5.7x28mm	10, 20
92	Ruger American Pistol	9mm, .45 ACP	10, 17
93	Ruger American Compact Pistol	9mm, .45 ACP	7, 10, 17

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Row	Make/Model	Caliber	Magazine Capacity
94	Ruger EC9S	9mm	7
95	Ruger Max-9	9mm	12
96	Ruger Security-9 Pro	9mm	15
97	Ruger Security-9 Compact Pro	9mm	10
98	Ruger Security-380	.380 auto	10, 15
99	Ruger Security-9	9mm	10, 15
100	Ruger LC380	.380 ACP	7
101	Ruger LCP	.380 ACP	6
102	Ruger LCP II	.22 LR	10
103	Ruger EC9S	9mm	7
104	Ruger Charger	.22 LR	15
105	Ruger Mark IV Series	.22 LR	10
106	Ruger 22/45 Mark IV Pistol	.22 LR	10
107	Ruger SR 22	.22 LR	10
108	Ruger SR1911	.45 ACP	7, 8
109	Ruger SR 1911 Officer	.45 ACP, 9mm	8
110	Ruger American Competition	9mm	17
111	Ruger Mark IV Competition	.22 LR	10
112	Ruger Mark IV Target	.22 LR	10
113	Ruger SR1911 Target	9mm, 10mm, .45 ACP	8, 9
114	Ruger SR 1911 Competition	9mm	10
115	SCCY CPX	9mm	10
116	SCCY DVG Series	9mm	10
117	Sig Sauer 1911	.45 ACP	6, 8
118	Sig Sauer P210 Carry Series	9mm	8
119	Sig Sauer P220	.45 ACP, 10mm	7, 8
120	Sig Sauer P226	9mm, .40 S&W	10, 12, 15
121	Sig Sauer P229	9mm	10, 15
122	Sig Sauer SP2022	9mm	10, 15
123	Sig Sauer P238	.380 ACP	6
124	Sig Sauer P320 Nitron	9mm, .45 ACP	15, 16
125	Sig Sauer P320 AXG Series	9mm	10, 17

Appendix A
Semi-Automatic Pistol Models Available from Top Handgun Manufacturers in the U.S.

Row	Make/Model	Caliber	Magazine Capacity
126	Sig Sauer P320 XCompact Series	9mm	10, 15
127	Sig Sauer Model 320 RX Series	9mm	10, 17
128	Sig Sauer P365	9mm	10, 12, 15
129	Sig Sauer P365 XL	9mm	12
130	Sig Sauer P365-380	.380 auto	10
131	Sig Sauer M17/M18	9mm	10, 17, 21
132	Sig Sauer P322	.22 LR	10, 20
133	Sig Sauer MPX Copperhead	9mm	35
134	Sig Sauer P938	9mm	6
135	Sig Sauer P320 X Series	9mm	10, 17
136	Sig Sauer P320 X-Five Series	9mm	10, 17
137	Smith & Wesson CSX Series	9mm	10, 12
138	Smith & Wesson M&P Shield M2.0 Series	9mm, .30 super carry, .40 S&W, .45 ACP	6, 7, 8
139	Smith & Wesson M&P 5.7 Series	5.7x28mm	22
140	Smith & Wesson Model SD Series	9mm, .40 S&W	10, 14, 16
141	Smith & Wesson SDVE Series	9mm, .40 S&W	10, 14, 16
142	Smith & Wesson Model SW1911	9mm, .45 ACP	7, 8, 10
143	Smith & Wesson Bodyguard 380	.380 ACP	6
144	Smith & Wesson Performance Center M&P380 Shield EZ	.380 ACP	8

Appendix A
Semi-Automatic Pistol Models Available from Top Handgun Manufacturers in the U.S.

Row	Make/Model	Caliber	Magazine Capacity
145	Smith & Wesson Performance Center M&P9 and M&P40 M2.0 C.O.R.E. Pro Series	9mm, .40 S&W	10, 15, 17
146	Smith & Wesson Performance Center M&P9 and M&P40 M2.0 Ported Series	9mm, .40 S&W	10, 15, 17
147	Smith & Wesson Performance Center M&P9 and M&P40 M2.0 Ported C.O.R.E. Series	9mm, .40 S&W	10, 15, 17
148	Smith & Wesson Shield EZ M2.0	9mm, .30 super carry	8, 10
149	Smith & Wesson Model 41 Target	.22 LR	10
150	Springfield Armory 1911 Garrison	.45 ACP	7
151	Springfield Armory 1911 DS Prodigy	9mm	17, 20
152	Springfield Armory 1911 Emissary	9mm, .45 ACP	7, 9
153	Springfield Armory EMP Enhanced Micro	9mm	9
154	Springfield Armory Hellcat 3" Micro Compact	9mm	11, 13
155	Springfield Armory Hellcat Pro	9mm	15
156	Springfield Armory Hellcat RDP (Rapid Defense Package)	9mm	11, 13
157	Springfield Armory XD Series	9mm, .40 S&W, .45 ACP	9, 10, 13, 16
158	Springfield Armory XD(M) Elite Series	9mm, 10mm, .45 ACP	10, 11, 15, 16, 22

Appendix A
Semi-Automatic Pistol Models Available from Top Handgun Manufacturers in the U.S.

Row	Make/Model	Caliber	Magazine Capacity
159	Springfield Armory Mil-Spec 1911A1	.45 ACP	7
160	Springfield Armory 1911 Loaded	.45 ACP	7
161	Springfield Armory TRP	.45 ACP	7, 8
162	Springfield Armory Ronin Operator	9mm, 10mm, .45 ACP	7, 9
163	Springfield Armory SA-35	9mm	13
164	Taurus G2 Series	9mm	6
165	Taurus G3 Series	9mm	10, 12, 15, 17
166	Taurus GX4 Series	9mm	10, 11, 13
167	Taurus TH Series	9mm, .40 S&W	11, 13, 15, 17
168	Taurus TX22	.22 LR	10, 16
169	Taurus Model 1911	9mm, .45 ACP	8, 9
170	Taurus Model 92	9mm	17
171	Taurus TX22 Competition	.22 LR	10, 16

SOURCES: *Gun Digest 2024*, pp. 468-503 (OAG002100–2135); *Shooter's Bible*, 115th ed., pp. 327-438 (OAG002400–2510); manufacturers' websites

Appendix B
AR Type, AK Type, and Other PICA-Regulated Pistols

Row	Make/Model	Caliber	Capacity
1	Angstadt Arms MDP-9	9mm	10, 15, 17
2	Angstadt UDP-9	9mm	10, 15, 17, 30
3	Arsenal, Inc. SAM7K	7.62x39mm	5, 30
4	Big Horn Armory AR500 .500 Auto Max Pistol	.500 Auto Max	5, 9
5	Brugger & Thomet SPC9-PDW	9mm	10, 30
6	Brugger & Thomet USWA1	9mm	17, 19, 30
7	Caracal USA CAR816 A2	5.56mm NATO	10, 30
8	Charles Daly PAK-9	9mm	10, 30
9	Chiappa Firearms CB-9	9mm	18
10	Christensen Arms CA9mm	9mm	10, 15, 17
11	Christensen Arms MPP	.300 BLK, .223 Rem., 6.5 CM, .308 Win.	10
12	CZ-USA Bren 2 MS	5.56mm NATO, 7.62x39mm	30
13	Daniel Defense DDM4 PDW	.300 BLK	30
14	Daniel Defense DDM4 V7P	5.56mm NATO, .300 BLK	30
15	Dark Storm Industries DS1 Variant 1 Pistol, Fixed Magazine	5.56mm NATO	30
16	Dark Storm Industries DS-9 Typhoon Pistol	9mm	17
17	Dark Storm Industries DS-15 Typhoon Pistol	5.56mm NATO, .300 BLK	30
18	Del-Ton Lima M-Lok Pistol	5.56mm NATO	30
19	Diamondback Firearms	5.7x28mm	20
20	DoubleStar Corp. ARP7	5.56mm NATO, .300 BLK, 9mm	30
21	DoubleStar Corp. STAR10-P	.308 Win	20
22	Fightlite Industries SCR Raider	5.56mm NATO, .300 BLK	10

Appendix B
AR Type, AK Type, and Other PICA-Regulated Pistols

Row	Make/Model	Caliber	Capacity
23	FoldAR Double FoldAR15 Gen3	.223 Rem., 5.56mm NATO, .300 BLK	10, 20
24	Heckler & Koch HK416 .22LR	.22 LR	10, 20, 30
25	Heckler & Koch MP5 Pistol	.22 LR	10, 25
26	Heckler & Koch SP5	9mm	10, 15, 30
27	Heckler & Koch SP5K PDW	9mm	10, 15, 30
28	Live Q or Die Q Honey Badger Pistol	.300 BLK	20
29	Live Q or Die Q Mini Fix	.300 BLK	20
30	Live Q or Die Q Sugar Weasel	.300 BLK	20
31	LWRC International IC-PSD Pistol	5.56mm NATO	20
32	LWRC International SMG-45	.45 ACP	25
33	Maxim Defense MD 1505SPB Pistol	.300 BLK, 5.56mm NATO, 7.62x39mm	20
34	Maxim Defense MD 1505SPS Pistol	.300 BLK, 5.56mm NATO, 7.62x39mm	20
35	Maxim Defense MD 1508CPS Pistol	.300 BLK, 5.56mm NATO, 7.62x39mm	20
36	Maxim Defense MDX 508CPB Pistol	.300 BLK, 5.56mm NATO, 7.62x39mm	20
37	Maxim Defense MDX 508SPB Pistol	.300 BLK, 5.56mm NATO, 7.62x39mm	20
38	Maxim Defense MDX 510 CPB	.300 BLK, 5.56mm NATO, 7.62x39mm	20
39	Maxim Defense MDX 510 SPB	.300 BLK, 5.56mm NATO, 7.62x39mm	20

Appendix B
AR Type, AK Type, and Other PICA-Regulated Pistols

Row	Make/Model	Caliber	Capacity
40	Maxim Defense PDX	.300 BLK, 5.56mm NATO, 7.62x39mm	20
41	Maxim Defense PDX SPS	.300 BLK, 5.56mm NATO, 7.62x39mm	20
42	Patriot Ordnance Factory Minuteman	5.56mm NATO, .350 Legend	not listed
43	Patriot Ordnance Factory Phoenix	9mm	35
44	Patriot Ordnance Factory Renegade Plus	5.56mm NATO, .300 Blackout	20, 30
45	Red Arrow Weapons 300 Blackout Pistol	.300 BLK	30
46	Rock River Arms LAR-PDS Pistol	5.56mm NATO	30
47	SAR USA 109T	9mm	10, 20, 30
48	Wilson Combat AR9 Pistol	9mm	10, 15, 17

SOURCES: *Shooter's Bible*, 115th ed., pp. 327-438
(OAG002400–2510); manufacturers' websites

EXHIBIT 1

James E. Yurgealitis

Manchester, Maryland

24 Hour Mobile: (443) 452-7248

Email: jyurgealitis@gmail.com

SUMMARY:

Self employed as a Legal and Public Policy Consultant providing Technical Firearms and Forensic Consulting, Testing and Policy Research / Training Services to Corporations, Legal Counsel and the Public Sector

EDUCATION:

B.A., Political Science and Psychology, St. John Fisher University, Rochester, New York – May 1985

PROFESSIONAL EXPERIENCE:

December 2012 to Present: Independent Legal and Policy Consultant / Subject Matter Expert

Currently provide independent consulting services to Corporations, Legal Counsel and Governmental entities in regard to Public Policy and Technical matters relating to Firearms, Firearms Policy, Forensics and Law Enforcement. Current and former clients include the Office of the District Attorney for Cook County Illinois, The City of Sunnyvale, California, The City of Highland Park, Illinois, The Office of the Attorney General for the Commonwealth of Massachusetts and the Center for American Progress, Washington D.C. I have provided sound policy and technical assistance for my clients to include expert testimony which successfully endured the opposition's legal appeals to the U.S. Circuit Court of Appeals and the U.S. Supreme Court.

December 2003 to December 2012: Senior Special Agent / Program Manager for Forensic Services ATF National Laboratory Center (NLC), Beltsville, Maryland. U. S Department of Justice, Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)

Directed the administration and management of ATF's Forensic Training Programs to include the National Firearms Examiner Academy (NFEA) a 12-month training program for State and Local Forensic Firearm Examiner Trainees. Also managed two additional forensic training programs. Administered a \$1M + budget in accordance with strict ATF and National Institute of Justice (NIJ) guidelines and reporting requirements. Responsible for oversight of all Forensic Firearms related research at the NLC. Supervised a full and part time cadre of fifty-two (52) instructors and administrative personnel. Maintained liaison with commercial firearms and ammunition manufacturers and subject matter experts and ensure that lesson plans and curriculum reflected the latest technical developments in firearms manufacture, forensics and their application to federal and state law. Applied for, received and managed in excess of \$2M in external grants to facilitate uninterrupted delivery of training during internal budget shortfalls. Detailed to the Department of Homeland Security Command Center in 2005 with overall responsibility to coordinate and direct Federal, State and Local Law Enforcement assets during and following Hurricanes "Irene" and "Katrina" and again in 2010 for "Andrew" and "Danielle".

June 1997 - December 2003: Special Agent / Violent Crime Coordinator, ATF Baltimore Field Division, Baltimore, Maryland

Responsible for management of ATF's "Project Disarm", a joint law enforcement initiative between ATF, The United States Attorney's office for the District of Maryland (USAO), the Baltimore City Police Department, the Baltimore City States Attorney's Office and the Maryland State Police. Duties included reviewing over 400 state and local firearms related arrests annually for subsequent referral to the USAO and Federal Prosecution. Managed a caseload of 75 – 100 criminal cases annually. Responsible for selection, referral, follow - up investigation and subsequent indictment and prosecution of armed career criminals. Testified in front of Federal Grand Juries in excess of 75 times annually. Was recognized, and testified, as an expert witness in the Identification, Operability and origin of Firearms and Ammunition in three Federal Judicial Districts. Toured over 25 firearms and ammunition manufacturing facilities in Europe and the United States. Temporarily assigned in 2001 for three months to the 9-11 Task Force investigation in conjunction with FBI Assets. Temporarily assigned to the D.C. Sniper Task Force Intelligence Group in 2002 for two months.

June 1990 – June 1997:

Special Agent, ATF Baltimore Field Division, Baltimore, Maryland

Served in various capacities as a street-level Special Agent. Acted as Group Supervisor and Assistant Special Agent in Charge on numerous occasions. Served on the Washington – Baltimore High Intensity Drug Trafficking Area (HIDTA) task force from 1995 – 1999. Investigated armed narcotics trafficking organizations, seized assets, authored and executed Federal and state search and arrest warrants, conducted surveillance, interviews / interrogations, testified in Federal and state courts as a fact witness, purchased firearms, explosives and narcotics while in an undercover capacity, investigated fatal bombings and arsons, firearms trafficking, alcohol and tobacco trafficking, homicide, fraud and gun store burglaries. Also while detailed for 8 months as the Public Information Officer authored press releases, provided interviews to local and national print and television media outlets and made presentations to local and national public and special interest groups and associations.

April 1989 – June 1990 and July 1986 – March 1987: Special Agent, United States Department of State, Diplomatic Security Service (DSS), Washington Field Office, Rosslyn, VA

Conducted investigations of violations of Federal Law under the department's purview to include Passport and Visa Fraud, Illegal trafficking of restricted firearms and war materials to prohibited countries, human trafficking, seized assets, authored and executed State, local and Federal Arrest and Search Warrants, testified in Federal Court as a fact witness, detailed on an as needed basis to the Dignitary Protection Division as Agent in Charge of multiple protective details for visiting and resident foreign dignitaries, temporarily assigned to support Physical and Personal Protective Security in various U.S. Embassies overseas on an as needed basis, detailed to the Secretary of State Protective Division on an as needed basis to supervise agents assigned to augment the permanent protective detail.

March 1987-February 1989: Special Agent, DSS, Secretary of State Protective Division, Washington, DC

Served in various capacities as Acting Agent in Charge, Acting Shift Leader, Lead Advance Agent and Shift Agent. Responsibilities included close personal protection of the Secretary of State both domestically and overseas, extensive foreign travel to facilitate and prepare security arrangements for overseas visits to include Presidential Summit meetings, liaison with foreign host government officials to plan and solicit assistance with security arrangements, supervision of agents temporarily assigned to augment the detail, liaison with U.S Government Intelligence Agencies and other Federal, State and Local Law Enforcement Agencies to identify and protect against potential threats to the Secretary of State.

CLEARANCES: Top Secret March 1986 valid through February 2015. Numerous prior SCI Clearances.

TEACHING EXPERIENCE:

- Instructed at the Federal Law Enforcement Training Center (FLETC), for ATF and other Federal Law Enforcement Agencies
- Instructed at the International Law Enforcement Academy (ILEA) in Budapest, Hungary
- Instructed for numerous State, local and / or regional law enforcement agencies both in the United States, Canada and Central America

LINKEDIN PROFILE AND ENDORSEMENTS:

https://www.linkedin.com/in/james-jim-yurgealitis-68618464?trk=nav_responsive_tab_profile_pic

REFERENCES:

Available upon request

James E. Yurgealitis: Consulting Engagements 2013 – 2024

(D) – Engaged by Defendant's Counsel

(P) – Engaged by Plaintiff's Counsel

(O) – Engaged by other entity

1. State of Maryland v. Smith, Linwood T, Circuit Court for Baltimore County, Maryland, Case No. 03-K-12-004002 (D) – Defendant's Private Counsel. Case review and consultation.
2. Freidman v. City of Highland Park, Illinois, United States District Court for the District of Illinois, Case No. 1:13-cv-9073 (D) – Defendant's Private Counsel acting as City Attorney. Report & Deposition.
3. Wilson v. Cook County, Illinois, Illinois Supreme Court, Case No. 2012 IL 112026 (D) – Office of the State's Attorney for Cook County, IL. Report & Deposition.
4. Fyock v. The City of Sunnyvale, California, United States District Court for the Northern District of California, Case No. 13-cv-05807 RMW (D) – City Solicitor. Declaration.
5. Wrenn v. District of Columbia, United States District Court for the District of Columbia, Civil Action Case No. 15-162 CKK (D) – U.S. Attorney's Office for the District of Columbia. Report & Deposition.
6. Mosaic Research Management, New York, New York, (O) – Private consulting firm. Confidential business assessment and projection.
7. Worman v. Healey, United States District Court for the District of Massachusetts, Case No. 1:17-cv-10107 (D) – Office of the Attorney General for the Commonwealth of Massachusetts. Report & Deposition.
8. Buckeye Firearms v. City of Cincinnati, Hamilton County, Ohio Court of Common Pleas, Case No. A1803098 (D) – Office of the City Attorney. Report & Deposition.
9. Powell v. The State of Illinois, United States District Court for the Northern District of Illinois, Case No. 18-cv-6675 (D) – Plaintiff's Private Counsel. Consultation.
10. Fletcher v. Century Arms, Circuit Court of the 15th Judicial District, in and for Palm Beach County, Florida, Case No. 502018CA009715 (P) – Plaintiff's Private Counsel. Case Review, Consultation & Deposition.
11. Pullman Arms v. Healey, United States District Court for the District of Massachusetts, Case No. 4:16-40136-TSH (D) - Office of the Attorney General for the Commonwealth of Massachusetts. Report.

Yurgealitis Consulting Engagements 2013 – 2024 contd.

12. United States v. Richard Cooke, United States District Court for the Western District of New York, Case No. 17-CR-0038 (D) – Office of the Federal Public Defender for the Western District of New York. Case review & consultation.
13. Long v. GAMO Outdoor U.S.A. Inc., District Court, Clark County Nevada, Case No. A-16-748401-C (P) – Plaintiff's Private Counsel. Test firing & consultation.
14. Viramontes v. Cook County, IL, United States District Court for the Northern District of Illinois, Case No. 1:21-CV-04595 (D) – Office of the State's Attorney for Cook County, Illinois. Report & Deposition.
15. Arnold, Joseph et al., v. Kate Brown et al - Harney County, OR Circuit Court, Case No. 22CV41008 (D) – State of Oregon. Case review & Court Testimony.
16. Oregon Firearms Federation et al., v. Kotek et al., United States Court for the District of Oregon, Pendleton Division, Case No. 2:22-cv-01815-IM (lead case), 3:22-cv-01859-IM (trailing case), 3:22-cv-01862-IM (trailing case), 3:22-cv-01869-IM (trailing case) (D) – State of Oregon. Case review, declaration, deposition & Court Testimony.
17. National Assn. for Gun Rights & Capen v. Campbell, United States Court for the District of Massachusetts, Case No. 1:22-cv-11431-FDS (D) – Office of the Attorney General for the Commonwealth of Massachusetts. Declaration.
18. Delaware State Sportsman's Assn. et. al. v. Delaware, United States District Court for the District of Delaware, Case No. No. 1:22-cv-00951-RGA (Consolidated), (D) – Office of the Attorney General for the State of Delaware. Declaration & consultation.
19. National Assn. for Gun Rights v. Lopez, United States District Court for the District of Hawai'i, Case No. 1:22-cv-404-DKW-RT (D) – Office of the Attorney General for the State of Hawai'i. Declaration.
20. Harrel et.al. v. Raoul, United States District Court for the Southern District of Illinois, Case No. 23-141-SPM (D) – Office of the Attorney General for the State of Illinois. Declaration, Rebuttal Declaration.
21. Herrera v. Raoul et.al., United States District Court for the Northern District of Illinois, Case No. 1:23-cv-00532 (D) – Office of the District Attorney for Cook County, Illinois. Declaration.
22. Gates et.al. v. Polis, United States District Court for the District of Colorado, Case No. 1:22-cv-01866 (D) – Office of the Attorney General for the State of Colorado. Expert Report, Rebuttal Report.

Yurgealitis Consulting Engagements 2013 – 2024` contd.

23. Herrera v. Raoul et.al., United States District Court for the Northern District of Illinois, Case No. 1:23-cv-00532 (D) – Department of Law, City of Chicago, IL. Declaration.
24. National Association for Gun Rights v. The City of Highland Park, Illinois, United States District Court for the Northern District of Illinois, Case No. 22-cv-4774 (D) – City of Highland Park, IL. Declaration.
25. Rocky Mountain Gun Owners et.al. v. The Town of Superior, Colorado (additional defendants The City and County of Boulder & City of Louisville, CO). United States District Court for the District of Colorado, Case No. 22-cv-1685-RM-NRN (D) – Town of Superior, CO. Expert Report & Rebuttal Report.
26. State of Ohio v. City of Columbus, Ohio, Court of Common Pleas for Fairfield County, Ohio, Case No. 2022 CV 00657 – (D) City of Columbus, OH. Expert Report.
27. Association Of New Jersey Rifle & Pistol Clubs, Inc. et al. v. Platkin et al., Cheeseman et al. v. Platkin et al., Ellman et al. v. Platkin et al., United States District Court for the District of New Jersey, Case No's. 3:18-cv-10507; 1:22-cv-04360; 3:22-cv-04397, (D) - Office of the Attorney General for the State of New Jersey, (D) - Expert Report.
28. Schoenthal v. Raoul, et al., United States District Court for the Northern District of Illinois, Case No. 23-cv-50326, (D) - Office of the District Attorney for Cook County, Illinois – Declaration.
29. Guardian Arms, LLC et al. v. Jay Inslee, et al., No. 23-2-01761-34, Thurston County, Washington Superior Court, (D), Hartford v. Ferguson, Case No. 3:23-cv-05364-RJB, United States District Court for the Western District of Washington – (D) - Pacifica Law Group (Counsel for Intervenor Defendant, Alliance for Gun Safety) – Declaration.
30. State of California, et al. v. Bureau of Alcohol, Tobacco, Firearms and Explosives et.al., United States District Court for the Northern District of California, San Francisco Division, Case No. 3:20-CV-06761-EMC, (P) – Gibson, Dunn & Crutcher LLP (Counsel for plaintiff Giffords Law Center) – Declaration.
31. Lane et. al.v.. Rocah et.al, United States District Court, Southern District of New York, Case No. 7:22-cv-10989-KMK, (D), New York State Office of the Attorney General – Expert Report.
32. Mayor and City Council of Baltimore v. Hanover Armory, LLC, Circuit Court of Maryland for Baltimore City, Case No. 24-C-22-002482, (D), Sanford, Heisler, Sharp LLC (Counsel for Plaintiff Mayor and City Council of Baltimore) – In progress.

EXHIBIT 2

Professional Qualifications of James E. Yurgealitis
Independent Legal, Public Policy and Forensic Consultant

I, James E. Yurgealitis, being duly sworn, depose and state:

- 1.) That I was previously employed as a Senior Special Agent / Program Manager with the Bureau of Alcohol, Tobacco Firearms & Explosives, (ATF) United States Department of Justice, and had been so employed since 1990. Prior to 1990 I was employed as a Special Agent with the Bureau of Diplomatic Security, (DSS) United States Department of State and had been so employed since 1986.
- 2.) I have a Bachelor of Arts Degree in Political Science and Psychology from St. John Fisher College, Rochester, New York.
- 3.) I am a graduate of the Federal Law Enforcement Training Center, Glynco, Georgia, the Criminal Investigator Training Program, Bureau of Diplomatic Security New Agent Training, and the Bureau of ATF New Agent Training Program.
- 4.) I have completed the Firearms Interstate Nexus Training Program conducted by the Firearms Technology Branch, ATF Headquarters, Washington, D.C.
- 5.) I have completed both Advanced Interstate and European Nexus Training conducted by ATF in conjunction with several domestic and European firearm manufacturers.
- 6.) I have testified in excess of 200 times before Federal Grand Juries regarding the classification, operability, and commerce of firearms and / or ammunition.
- 7.) I have previously qualified as an expert witness regarding the origin, operability / classification and interstate movement of firearms and ammunition in U.S. District Court for the District of Maryland, U.S. District Court for the District of Delaware and the Circuit Court For Baltimore City, Maryland.
- 8.) I have conducted regular training for local, state and federal law enforcement agencies both domestically and overseas regarding firearms classification, operability and firearms statutes.
- 9.) I maintain a personal library of books, printed material and documents that relate to the field of firearms, ammunition, and firearms classification, attend local and national trade shows and professional association meetings, and regularly review periodicals relating to firearms and ammunition.
- 10.) I attend trade shows, maintain contact with, and regularly consult with other persons, to include published authors and recognized experts in the origin, identification and classification of firearms and ammunition.
- 11.) I have, during my tenure with ATF, personally examined in excess of five thousand

Qualifications Of James E. Yurgealitis contd.

firearms to determine their origin and classification and operability, and to facilitate the tracing of those firearms.

I have toured production facilities for numerous firearms and ammunition manufacturers. The tours were conducted by corporate historians, corporate officers, or production engineering personnel.

Domestic Firearm Manufacturers:

Bushmaster Firearms, Ilion, NY, USA
Colt, New Haven CT, USA (4x)
H&R 1871 Inc., Chicopee, MA, USA (2x)
Marlin, North Haven CT, USA (4x)
O.F. Mossberg & Sons, North Haven, CT, USA (4x)
Remington Firearms, Ilion, NY, USA
Savage Arms Inc., Westfield, MA, USA (4x)
Sig-Sauer / SIGARMS Inc., Exeter, NH, USA (3x)
Smith and Wesson, Springfield, MA, USA (4x)
Sturm Ruger, Newport, NH, USA (4x)
Yankee Hill Machining, Florence, MA, USA

Foreign Firearm Manufacturers:

Carl Walther GmbH, Ulm, Germany
Ceska Zbrojovka (CZ), Uhersky Brod, Czech Republic
Fegarmy (FEG), Budapest, Hungary
F.N Herstal S.A., Herstal, Belgium
Glock GmbH, Deutsch-Wagram, Austria
Heckler & Koch GmbH, Oberndorf au Neckar, Germany
J.P. Sauer & Sohn GmbH, Eckernforde, Germany

Domestic Ammunition Manufacturers:

Fiocchi Ammunition, Ozark, MO, USA
PMC, Boulder City, NV, USA
Remington, Lonoke, AR, USA (4x)
Sierra, Sedalia, MO, USA
Starline Brass, Sedalia, MO, USA

European Proof Houses

Beschussamt Ulm, (Ulm Proofhouse) Ulm, Germany
Beschusstelle Eckernforde, (Eckernforde Proofhouse) Eckernforde, Germany
Czech Republic Proofhouse, Uhersky Brod, Czech Republic
Liege Proofhouse, Liege, Belgium

Qualifications Of James E. Yurgealitis contd.

I have been allowed regular access to the following reference collections:

Bureau of Alcohol, Tobacco Firearms and Explosives Reference Collection, Martinsburg, West Virginia, USA consisting of 5,000+ firearms

Liege Proofhouse, Liege, Belgium consisting of 1,000+ ammunition cartridges

Springfield Armory National Historic Site Firearms Collection, Springfield, MA, USA consisting of 10,000+ Firearms

Smithsonian Institution (Museum of American History) Firearms Reference Collection Washington, DC, USA, consisting of 4000+ firearms

Wertechnische Studiensammlung des BWB, (Federal Defense Procurement Bureau Museum) Koblenz, Germany consisting of 10,000+ Firearms

I have toured the following museums:

Heeresgeschichtliches Museum, (Museum of Military History), Vienna, Austria

Hungarian Military Museum, Budapest, Hungary

Springfield Armory National Historic Site, Springfield, MA, USA

United States Air Force Museum, Dayton, OH, USA

United States Army Ordnance Museum, Aberdeen Proving Ground, Aberdeen, MD, USA

United States Military Academy Museum, West Point, NY, USA

United States Naval Academy Museum, Annapolis, MD, USA

Wertechnische Studiensammlung des BWB, (Federal Defense Procurement Bureau Museum) Koblenz, Germany

Membership in Professional Organizations:

Member, International Ammunition Association (IAA)

Technical Advisor (pending approval), Association of Firearm and Toolmark Examiners (AFTE)

Member, Federal Law Enforcement Officers Association (FLEOA)